



amateur radio

Vol. 34, No. 6

JUNE

1966

Registered at G.P.O., Melbourne, for
transmission by post as a periodical

25c

NEW WELWYN INSULATED METAL OXIDE

POWER RESISTORS

Available in following sizes: 10 ohms, 20, 30, 40, 50, 60, 75, 82, 91, 100, 120, 150, 220, 270, 330, 370, 390, 470, 500, 560, 680, 720, 750, 820, 830, 1000, 1200, 1500, 1800, 2200, 2400, 2700, 3300, 3700, 4300, 4700, 5600, 6800, 8200, 8300, 10K, 12K, 15K, 18K, 22K, 24K, 25K, 27K, 33K, 37K, 43K, 47K, 56K, 68K ohms. Prices: 4 watts, 3.6¢; 8 watts, 4.6¢; 10 watts, 5.6¢.

TOLERANCE: Normal manufacturing tolerance plus or minus 5%. Can be selected to closer tolerances.

Life: Shelf Stability: Less than 2% over 12 hours.

Full Load Stability: For 2000 hours at 70 deg. C. less than 5%.

Long-term Stability: Less than 0.1% per 1000 hours.

Temperature co-efficient: Less than plus or minus 30 mW/dg. C. from 0-125 deg. C.

Dielectric Strength: 600 volts R.M.S.

Encapsulation: Fireproof Silicone Cement.

Axial Leads: Minimum length 1 1/4 in.—21 s.w.g. dia.

TRANSISTORS AND DIODES

AC105	-	9/6	95c	OC169	19/6	\$1.95	
AC126	-	9/6	95c	OC170/AF115N	19/6	\$1.95	
AC127	-	10/6	\$1.05	OC171/AF114N	19/6	\$1.95	
AC128	-	10/6	\$1.05				
AF14N/OC171	-	10/6	\$1.05	2N217	-	9/6	95c
AF115N/OC170	-	10/6	\$1.05	2N217S	-	9/6	95c
AF116N	-	9/6	95c	2N270	-	13/6	\$1.35
AF117N	-	9/6	95c	2N270	-	19/6	\$1.95
AF118N	-	9/6	95c	2N370	19/6	\$1.95	
BC107	-	11/6	\$1.10	2N372	19/6	\$1.95	
BC108	-	10/6	\$1.05	BY100/OA214	-	16/6	\$1.65
BC109	-	14/6	\$1.40	OA79	-	4/6	40c
OC22	-	20/6	\$2.00	OA80	-	3/6	30c
OC35/AT1138A	-	35/6	\$3.50	OA81	-	3/6	30c
OC4N	-	11/6	\$1.10	OA90	-	3/3	32c
OC4N	-	11/6	\$1.10	OA91	-	3/3	32c
OC4N	-	11/6	\$1.10	OA95	-	3/3	32c
OC4N	-	11/6	\$1.10	OA200	-	7/6	75c
OC71/2N215	-	12/6	\$1.20	OA210, IN1783, IN3194	-	12/6	\$1.20
				12R25	-	8/6	85c
		7/6 or 3 for \$1		OA211, S16A82	-	16/6	\$1.65
		7/6 or 3 for \$2		IN3491 50 p.l.v. 18A	-	9/6	95c
OC72	-	13/6	\$1.35				
OC74N	-	9/6	95c				

SCOPE SOLDERING IRONS

Scope Stand, \$5.52. De luxe, \$8.95. Birkco, \$4.50. Minicooper, \$4.51. Vibroscope, \$4.93.

SCOPE SPARES

Copper Tips,		Return Spring	-	\$0.12
Standard	-	File Lead	-	\$1.95
Each	-	Bakelite Lock	-	\$0.12
Copper Tips,		Nut	-	\$0.12
Instrument	-	Brass Nut	-	\$0.25
Barrel, Standard	-	Handle, complete	-	\$1.97
Barrel, Stainless	-	Switch Ring	-	\$0.25
Steel	-	Rubber Grip	-	\$0.63
Element	-	Carbon	-	\$0.18
Bead Retaining	-	Grommet Spring	-	\$0.18
Nut	-	Terminal Box	-	\$0.18
Heads Ceramic	-	Cover for transformer	-	\$0.40
Push Rod Assembly	-		-	

MINISCOPE SPARES

Copper Tips	-	\$0.09	Insulating Bush	-	\$0.10
Barrel, Stainless	-	\$1.33	Switch Return	-	\$0.10
Element	-	\$0.09	Spring	-	\$0.10
Push Rod Assembly	-	\$0.80	Contact Lug	-	\$0.10
Handle, slotted	-		Switch Lever	-	\$0.67
half, c.w., brass	-		Flex Lead	-	\$0.54
clip	-	\$1.57	Handle, unslotted	-	\$0.71

ZENER DIODES

OA2200	-	15/6	\$1.55	OA2222/BZ214	-	27/6	\$2.75
OA2212	-	12/6	\$1.25	OA2234/BZ216	-	27/6	\$2.75
OA2213	-	12/6	\$1.25				
OA2255	-	27/6	\$2.75				

POWER TRANSFORMERS

1992	150-0-153V, 30 mA, 6.3v, 1.75a	37/6	\$3.75
1993	225V-0-225V, 50 mA, 6.3v, 2a	45/6	\$4.50
2062	Voltage Doubler, 250, 253V, d.c. 80 mA, 6.3v, c.t. 2.5a	67/6	\$6.75
2064	Voltage Doubler, 340, 315V, d.c. 125 mA, 6.3v, c.t. 2.5a	87/6	\$8.75
2067	Voltage Doubler, 370, 285, 280V, d.c. 100 mA, 6.3v, c.t. 4a	83/6	\$8.35
290-0-290V, 60 mA, 6.3v, 2a, 5v, 2a	27/6	\$2.75	
385-0-385V, 125 mA, 6.3v, 3a, 5v, 2a	35/6	\$3.50	
385-0-385V, 125 mA, 6.3v, 3a, 6.3v, 2a, 5v, 2a	45/6	\$4.50	

AUDIO TRANSFORMERS

2624	7000 ohm c.t., 500 ohm s.e. prim.; 2, 3, 7, 8, 15 ohm sec.	46/6	\$4.60
4013	15 watt 8000 ohm c.t. 20% prim.; 3, 7, 8, 15 ohm sec.	164/6	\$16.40
4020	10 watts prim, 8000 ohm c.t. 20% Ultra Linear (Mullard 10-10), sec. 3.7 or 15 ohm		

TRANSISTOR TRANSFORMERS

TD1	Driver 3000 ohm, 2000 ohm c.t.	19/6	\$1.95
TD2	Driver, 420 ohm c.t., 105 ohm c.t.	19/6	\$1.95
TD1	Output, 375 ohm c.t., 3.5 ohm s.e.	16/6	\$1.60
TD2	Output, 97 ohm c.t., 3.5 ohm s.e.	18/6	\$1.80
TD4	Output, 300 ohm c.t., 3.5 ohm s.e.	37/6	\$3.75

FILAMENT TRANSFORMERS

T4/4	230v, 6.3v, 2 a.	32/6	\$3.25
2150	240v, 6.3v, 2.5 a. pr two by 6.3v, 1.25a.	35/6	\$3.50
2155	240v, 6.3v, 7.5v, 8.5v, 9.5v, 12.5v, 15v, 1 amp.	46/6	\$4.60
12/64	240v, 6v, 6a, 12v, 6a	57/6	\$5.75
12/66	240v, 6v, 6a, 12v, 6a	57/6	\$5.75

ALIGNMENT TOOLS

Label No. 4 Alignment Tool Kits. All popular sizes. Four tools in plastic pouch. 12/-, \$1.20.

TRANSISTOR SIGNAL INJECTOR

Pencil Type 2 Transistor, complete with instructions and battery, 55/-, \$5.50.

CONDENSERS

M.F.D.	Volts	Price	M.F.D.	Volts	Price
2	22	35c	50	153	75c
3	6	30c	53	350	\$1.35
4	12	30c	53 pl.	350 Can.	\$1.60
5	18	30c	53	450	\$1.60
8	18	33c	64	6	25c
10	24	30c	64	18	35c
8	350	8c	64	35	35c
8	525	48c	160	6	23c
10	15	30c	100	12	25c
10	6	30c	100	50	72c
10	15	35c	100	100	75c
15	35	35c	100	350 Can.	\$1.57
16	10	35c	100	300	\$1.57
16	30	35c	100	350 Can.	\$1.63
20	30	62c	150	150	75c
20	350	63c	200	25	65c
20	575	30c	250	6	50c
25	6	32c	250	30	57c
25	18	35c	250	6	50c
25	18	35c	250	25	75c
25	25	35c	250	50	75c
25	45	35c	500	12D	90c
25	350	60c	500	50	\$1.25
25	609	82c	500	50	\$1.25
30	15	35c	1000	6	92c
30	32	35c	1000	15	\$1.05
30	15	35c	1000	25	\$1.45
50	6	32c	1000	15	\$1.45
50	25	47c	2000	18	\$1.70

"AMATEUR RADIO"

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA. FOUNDED 1910

JUNE 1966
Vol. 34, No. 6

Editor:

K. M. COCKING VK3ZFQ

Assistant Editor:

K. E. Pincott VK3AFJ

Publications Committee:

G. W. Baly (Secretary) VK3AOM
A. W. Chandler (Circulation) VK3LC
E. C. Manifold VK3EM
W. E. J. Roper VK3ARZ

Druggiesmen:

Ken Gillespie VK3GK
Clem Allen VK3ZIV
Ian Smith 36 Green St., Noble Park

Advertising Enquiries:

C/o P.O. Box 36, East Melbourne, C.2, Vic.
or
Mrs. BELLAIRS, Phone 41-3535. 478 Victoria
Parade, East Melbourne, C.2, Victoria. Hours
10 a.m. to 3 p.m. only.

Publishers:

VICTORIAN DIVISION W.I.A.,
Reg. Office: 68a Franklin St., Melbourne, Vic.

Printers:

"RICHMOND CHRONICLE," Phone 42-2419.
Shakespeare St., Richmond, E.1, Vic.



All matters pertaining to "A.R." other
than subscriptions, should be addressed to:

THE EDITOR,
"AMATEUR RADIO,"
P.O. BOX 36,
EAST MELBOURNE, C.2, VIC.

Acknowledgments will be sent following
the Committee meeting on the second Mon-
day of each month. All Sub-Editors should
forward their articles to reach "A.R."
before the 5th of each month. Any item
received after the Committee meeting will
be held over until the next month. Pub-
lication of any item is dependent upon space
availability, but in general about two
months may elapse before a technical
article is published after consideration by
the Publications Committee.



Members of the W.I.A. should refer all
enquiries regarding delivery of "A.R." direct
to their Divisional Secretary and not to
"A.R." direct. Non members of the W.I.A.
should write to the Victorian Division, C/o
P.O. Box 36, East Melbourne. Two months'
notice is required before a change of mail-
ing address can be effected. Readers should
note that any change in the address of their
transmitting station must, by P.M.G.
regulation, be notified to the P.M.G. in the
State of residence, in addition "A.R."
should also be notified. A convenient form
is provided in the "Call Book".



Direct subscription rate is \$3.00 a year, post
paid, in advance. Issued monthly on the
first of the month, January edition excepted.

FEDERAL COMMENT



A FABLE FOR AMATEURS—WITH A MORAL

Last century there were two very small kingdoms, Manx and Utopia, both of which bordered the much larger kingdom of Gargantua. King Otto of Manx and King Paramount of Utopia were firm friends as were their fathers before them. Peaceful relations had existed between the two countries for centuries and as far back as man could remember, a mutual defence treaty had existed between Manx and Utopia. This bond had been a strong deterrent to the ambitious policies of the King of Gargantua, who cherished dreams of taking over the two smaller countries, thus adding to his domain.

Otto and Paramount both enjoyed the same hobby—the breeding and raising of white cats with pink eyes. Their subjects had also become enthusiastic about this hobby and new and better methods of improving the breed were constantly exchanged between the two countries.

But it came to pass that a bright young man in Manx developed a new strain of white cat—one with green eyes. The Manx king soon disposed of his pink-eyed cats and devoted his efforts to the improvement of the green-eyed breed, as did his subjects. Soon this difference in ideas led to a bitter feud between the two kings—and the two kingdoms. As the rivalry increased, friendships crumbled. There was name calling and border incidents became numerous. Soon the armies of both countries were massed along the frontier, ready to attack—the mutual defence treaty was forgotten.

Today Manx and Utopia are no more. The Ambitious King of Gargantua had no difficulty in defeating the divided armies of the two tiny kingdoms and annexing their lands. Cats are now forbidden in these areas.

There is a moral in the foregoing story for us—the Radio Amateurs of Australia. Let us not become divided amongst ourselves over relatively petty differences. Amateur Radio means different things to different people. Respect the other fellow's major interest and don't resort to name calling if his ideas don't coincide with yours. Most of all remember that the Amateur in this country is represented by the Wireless Institute of Australia and even if you have a legitimate complaint against the W.I.A., you will achieve nothing by dropping your membership and loudly proclaiming your intense dislike of the Institute to all and sundry. Yes, you may hurt the Institute a little, but it will still outlast you—more important you hurt the Amateur fraternity as a whole by dividing members one against the other. The probable result is summed up in our fable. Be positive in your approach. If you have a gripe take office in the Institute and attempt to rectify what you consider to be wrong. You are then doing all Amateurs, including yourself, a service.

—D. H. Rankin, Federal Activities Officer, W.I.A.

CONTENTS

Two-Unit Pye Base Station Conversion	3	Standard Stations received in Far East	15
Noise Limiter for Mobile Use	5	W.I.A. Federal President's Annual Report	17
Some Thoughts on Hang A.g.c. Systems	7	Reciprocal Licence issued by U.S.A.	21
1966 John Moyle National Field Day Results	9	Higginbotham Award	21
"Fifty and Over"	11	Contest Calendar	21
VSPMP, Maldiv Is.	11	YRC	22
Remembrance Day Contest, 1966, Rules	12	DX	22
Central Queensland Branch Display	15	Prediction Charts	22
Boeing Demonstrates Meteor-Burst Communication	15	VHF	23
		Publication Committee Reports ..	23
		SWL	24
		Federal and Divisional Monthly News Reports	25

JOYSTICK

In one gloriously successful year, thousands of JOYSTICKS have been sold to stations throughout the world. PARTRIDGE ELECTRONICS have been inundated with testimonials from JOYSTICK users. Orders for this revolutionary (pat. pend.) variable frequency antenna system have so multiplied that new premises have been leased in order to cope with demand. ALL JOYSTICK orders are now despatched immediately.

Every JOYSTICK System is supplied complete with feeder and an antenna matching unit—selected by you to suit your personal set-up. It is ready to go on the air and gives an unprecedented 'lift' to signal strengths especially for 'cliff' and 'cave' dwellers—EVEN FROM UNDERGROUND!

Naturally the advantages of using the 'JOYSTICK' 'up-in-the-clear' are even greater!

New Joystick Range

There is now a whole new range of Joystick Systems—made to match your QTH, your rig and your pocket! The SYSTEMS cover TX/RX, SWL, indoor and outdoors, mobile. Made only in the finest materials the SYSTEMS are reliable and permanent!

TOTAL COST of JOYSTICK V.F.A. SYSTEMS

Transmit and Receive	Australian Postage			
	NSW	VIC/QU.	WA/NT/TAS.	
De Luxe JOYSTICK SYSTEM	\$31.40 + \$0.75	\$1.00	\$1.25	
Standard	\$27.20 + \$0.45	\$0.54	\$0.74	
DX-Magnet	\$25.10 + \$0.45	\$0.54	\$0.74	
Receiving Only				
De Luxe JOYSTICK SYSTEM	\$26.40 + \$0.62	\$0.82	\$1.12	
Standard	\$22.20 + \$0.42	\$0.52	\$0.72	
DX-Magnet	\$20.10 + \$0.42	\$0.52	\$0.72	
Complete Mobile System	\$33.70 + \$0.72	\$0.92	\$1.32	

RF indicators/phone monitor.

RF45 (untuned) \$11.75 + 15 c postage all states, complete with crystal earpiece.

VARIABLE FREQUENCY ANTENNA SYSTEM

How can a 7' 6" long device out-perform a conventional antenna many times its size?

HERE IS YOUR ANSWER

ZL4GA WORKS GSWP ON 89 METRES

INDOORS—ZL4GA's JOYSTICK got him 569 on 3.5 Mcs. from GSWP on 21st February, 1965, at 0850 G.M.T. Alan had worked VE7BIY on 3.5 Mcs. at 559 and also logged 59 countries on 14 Mcs. by that date, including LU1HBS and 9M4LP.

Testimonials continue to pour in!

WTOE, U.S. Govt. Electronics Engineer (Retd.) writes: "It equals half wave dipoles and similar conventional antennas on 160, 80 and 40 and has proven superior to them in the 15 and 20 metre bands. I would most certainly recommend it to anyone looking for an effective 'all-band' antenna system and particularly to those who have limited antenna space."

READ ALL ABOUT IT!

This ticket will bring you the new brochures by return of post!

NAME..... (Call Sign).....

ADDRESS.....

Address your order to:—

Pennant Imports (Electronics) Co.

P.O. Box 26, Beecroft, N.S.W.

TREMENDOUS SAVINGS

YEAR-END CLEARANCE SALE—EVERYTHING MUST GO!

HALLICRAFTERS

SK111—S.S.B. Receiver. Double conversion, selectable sideband, variable selectivity, 100 Kc. xtal calibrator. Amateur band only. Price £150.

SR150—S.S.B./C.W. Transceiver. 5 band, filter type gen., 150 watts £250 0 0 plus 12½% tax

ST107—S.S.B. Receiver, 550 Kc. to 54 Mcs. £65 0 0 plus 25% tax

HT45—S.S.B. Linear Amplifier £157 0 0 plus 12½% tax

CB3A—5 watt 27 Mcs. Transceiver £65 0 0 plus 12½% tax

CB8—1 watt 27 Mcs. Transceiver £47 0 0 plus 12½% tax

80 Mcs. 50 watt mobile or base Transceiver. Latest 6 channel extra narrow band £195 0 0 plus 12½% tax

GALAXY

Galaxy 3 Triband Transceiver £202 0 0 plus 12½% tax

Galaxy 5 All band Transceiver £250 0 0 plus 12½% tax

Galaxy 250 volt a.c. Power Supply £47 16 10 plus 12½% tax

SWAN

Swan SW140, single band Transceiver, secondhand, £98.

Swan SW140 Converted to triband Transceiver, fitted with new front panel. Requires some work, £98

HEATH

Heathkit HW22—40 m. Transceiver, secondhand, with triband modification kit, £95.

W.F.S. ELECTRONICS SUPPLY CO.

ATLANTIC RADIO

227 Victoria Road, Rydalmere, N.S.W. 638-1715

36 Oxford St., Woollahra, N.S.W. 31-7811

TWO-UNIT PYE BASE STATION CONVERSION

ROGER L. HARRISON,* VK3ZRY

THESE units are the old a.m. base stations which have recently appeared on disposals in small numbers. The conversion presented here is for six metres a.m. net frequency (53.032 Mc.).

TRANSMITTER CONVERSION

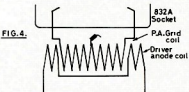
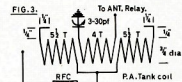
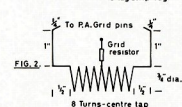
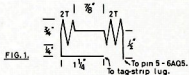
The transmitter runs an 832A in the final or a QQE04/20. Both tubes are identical. The driver is generally a 6AQ5, and a 6AM5 or 6AU6 is used in the oscillator. The transmitter conversion is easy and quite straightforward. The coils are easily located under the chassis; no trouble should be experienced in locating them. Remove all the original coils and replace, one at a time (to remember the connections) with the following coils:

Oscillator Anode Coil. Rewind 14 turns of 26 B. & S. enamelled wire. This should resonate to 26.5 Mcs.

Driver Anode Coil. Wind 4 turns, $\frac{3}{4}$ in. inside diameter of 18 s.w.g. enamelled wire. Refer to Fig. 1.

P.A. Grid Coil. Wind 8 turns, 18 s.w.g. enamelled wire, $\frac{3}{4}$ in. diameter centre tapped. Refer to Fig. 2.

P.A. Tank Coil. Wind 11 turns, $\frac{3}{4}$ in. inside diameter of 18 gauge B. & S. enamelled wire. Refer to Fig. 3.



Output Link. Wind 4 turns, $\frac{3}{4}$ in. inside diameter of 18 gauge B. & S. enamelled wire. A 3-30 p.F. Philips trimmer is in series with the earth end. Refer to Fig. 3.

Note that the p.a. grid coil is mounted inside the driver plate coil to achieve tight inductive coupling. (See Fig. 4.)

There is no conversion needed on the audio section except that the microphone you desire to use may not suit the unit. If so, then I leave it up to the constructor to make his own arrangements, as ideas and methods on this subject will vary widely. The tune-up procedure I will leave till later, as this should be attempted after receiver conversion.

RECEIVER CONVERSION

This will almost be the same as per the article in "A.R.," November, 1965. I used a different crystal than that specified in the article, and noticed a few differences. The conversion presented here is that to suit an 11,186.4 Kcs. crystal.

Coils: The coil data is as follows (see Fig. 5):—

- L1=11 turns, tap 2½ turns from earth, 20 B. & S. enamelled.
- L2=7 turns, 20 B. & S. enamelled.
- L3=6½ turns, 20 B. & S. enamelled.
- L4=5 turns, 20 B. & S. enamelled.
- L5=11 turns, 26 B. & S. enamelled.

Mute Circuit: Next to the mute relay you will find two capacitors mounted side by side as shown in Fig. 6. Remove the one towards the back of the chassis—this improves the sensitivity of the mute. Also remove the 4.7K ohm resistor and change the 10 ohm to 39 ohm resistor.

Alignment: This will be the same as in "A.R.," November, 1965, except that for an 11,186 Kcs. crystal the 1st i.f. will be 14.0864 Mcs. The 1st i.f. transformer (T1) will tune to this easily.

To align the receiver you will find it necessary to connect the terminal on the back of the chassis marked "Relay" to the "E" (earth) terminal. Also connect the 3 ohm terminal to the LS terminal. You will also find it necessary to turn the mute control fully anticlockwise. The two pots mounted on the chassis are r.f. gain and a.f. gain; these should be turned fully clockwise.

Mute Adjustment:

1. Turn on receiver.
2. Turn mute control fully anticlockwise.
3. Allow receiver to warm up until the mute relay opens and noise is heard.
4. With antenna connected to unit and noise coming through, turn the mute control clockwise slowly until the mute relay is heard to just drop out. This is the most sensitive position of the control. The meter on the front panel will probably read. Don't worry, as this is only a visual indication of when a signal is present when the monitor switch is turned down.

5. DO NOT advance the control any further as this reduces the sensitivity of the mute. If this occurs, return the pot to fully anti-clockwise and repeat the procedure.

It was noted that after about another 20 minutes or so the mute would open of its own accord. Re-setting the mute control will restore order.

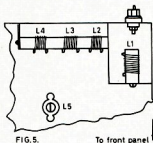


FIG. 5.

To front panel

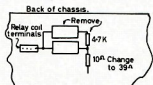


FIG. 6.

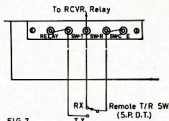


FIG. 7.

TRANSMITTER ADJUSTMENT

Before commencing the transmitter tune up the terminals on the back left-hand end (below power trannie) should be connected as follows:

1. SW-C to E.
2. Relay to SW-T.

On the right-hand back terminal board:

1. E to INPUT.
2. One side of mic. to INPUT.

Before commencing tune-up a proper antenna should be connected to the Tx. An in-line r.f. indicating device such as an s.w.r. meter should be used to monitor r.f. output.

For tune-up, toggle switch at back of chassis should be up;

For operation and modulation checks it should be down.

The tune-up procedure is as follows:

1. Turn meter switch to G1.
2. Turn on Tx and peak oscillator anode coil for maximum reading.

(Continued on Page 5)

* 1 Mary St., North Balwyn, E.9, Vic.

GELOSO V.F.O.

Model 4/104 V.F.O. Unit. Tunes 80, 40, 20, 15, 11 and 10 metres. Uses 6CL6 and 5703 valves. Price (valves extra), \$24.80.
Model 4/102 V.F.O. Unit. Tunes 80, 40, 20, 15 and 10 metres. Uses 6J5G, 6AU6 and 6L6 valves. Price (valves extra), \$24.80.

Prices include Sales Tax.
Notes on Circuit Application of Geloso V.F.O. Units available upon request.
All Geloso V.F.O. Units are supplied complete with calibrated dial, pointer and perspex escutcheon.

WILLIS AIR-WOUND INDUCTANCES

Turns	per	B. & W.	Price
1-08	1/2 in.	8 3 in. No. 3002	.. \$0.55
1-16	1/2 in.	16 3 in. No. 3003	.. \$0.55
2-08	1/2 in.	8 3 in. No. 3006	.. \$0.66
2-16	1/2 in.	16 3 in. No. 3007	.. \$0.66
3-08	3/4 in.	8 3 in. No. 3010	.. \$0.76
3-16	3/4 in.	16 3 in. No. 3011	.. \$0.76
4-08	1 in.	8 3 in. No. 3014	.. \$0.86
4-16	1 in.	16 3 in. No. 3015	.. \$0.86
5-08	1 1/4 in.	8 4 in. No. 3018	.. \$1.05
5-16	1 1/4 in.	16 4 in. No. 3019	.. \$1.05
6-16	2 in.	10 4 in. No. 3007	.. \$1.35

SPECIAL ANTENNA AIR-BAND TUNER INDUCTANCE
(equiv. B. & W. No. 3007-7 in.)
7 in. length, 2 in. diam. 10 t.p.s., \$2.45.
References: A.R.R.L. Handbook, 1961;
"QST", March, 1959;
"Amateur Radio", Dec., 1959.

"WILLIS" CHASSIS PUNCHES



MADE OF FINEST GRADE TOOL STEEL	
1 in. punch	.. \$2.30 1-1/16 in. punch \$3.60
1 1/2 in. "	.. \$2.30 1 1/2 in. " \$3.50
2 in. "	.. \$2.30 1-3/16 in. " \$4.00
2 1/2 in. "	.. \$2.30 1 1/2 in. " \$4.30
3 in. "	.. \$2.40 1 3/4 in. " \$4.60
3 1/2 in. "	.. \$2.40 1 3/4 in. " \$4.60
4 in. "	.. \$2.50 1 3/4 in. " \$4.60
4 1/2 in. "	.. \$2.50 1 3/4 in. " \$4.60
5 in. "	.. \$2.50 1 3/4 in. " \$4.60

SPECIAL SIZES MADE TO ORDER.

"Q-MAX" CHASSIS CUTTERS

SCREW TYPE
BRITISH MADE
SAVES TIME - GIVES PROFESSIONAL APPEARANCE

SIZES		SIZES	
3/8 in. ....	.. \$2.00	1-5/16 in. ....	.. \$4.00
7/16 in. ....	.. \$2.00	1 1/2 in. ....	.. \$4.00
1 in. ....	.. \$2.00	1 3/4 in. ....	.. \$4.00
1 1/8 in. ....	.. \$2.00	1 3/4 in. ....	.. \$4.00
1 1/4 in. ....	.. \$2.50	1 3/4 in. ....	.. \$4.00
1 1/2 in. ....	.. \$3.05	2 in. ....	.. \$4.00
1 in. ....	.. \$3.67	2-3/32 in. ....	.. \$7.25
1-1/16 in. ....	.. \$3.67	2 1/2 in. ....	.. \$7.25
1 in. ....	.. \$3.67	1 in. square	.. \$5.30
1 in. ....	.. \$3.67	1/16 in. square	.. \$3.35
1-3/16 in. ....	.. \$3.67	2-1/32 in. x 15/16	
1 3/4 in. ....	.. \$3.67	Rectangular ..	\$7.00

NOISE LIMITER FOR MOBILE USE

DAVID PRIESTLEY*

- Turn meter switch to G2 and peak 6AQ5 anode (trimmer on top of chassis) for maximum reading.
- Turn meter switch to p.a. and tune for a dip. Adjust the coupling and tuning of the output link for maximum r.f. out. Retune p.a. tuning for a dip. Now check modulation by turning meter switch to mod. and make sure that it kicks to about 100% or a bit more on peaks. If not, keep adjusting link coupling and tuning as well as p.a. tuning until a good compromise between r.f. output and modulation is reached.
- Adjust the modulator gain (pot. near 6SN7) to suit the microphone you use.

INTERCONNECTING UNITS

When both the transmitter and receiver are working to your satisfaction mount them in the cabinet and connect the terminal marked RELAY on the back of the receiver (previously connected to earth) to the SW-R terminal on the left-hand board on the back of the transmitter chassis. Connect, via coaxial cable, the socket marked RE to the aerial socket on the receiver. Check that the receiver relay drops out when you press the transmit key.

REMOTE CONTROL OF UNIT

Transmitter: Connect SW-T, SW-R and SW-C as in Fig. 7.

Receiver: Remove connection between 3 ohm and LS terminals. Then connect as shown in Fig. 8.

Well, that's about the lot; hope your unit works like the one I converted. Any queries should be addressed to me, including an s.a.s.e.

In normal communications receivers the noise is generated within the set itself by the valves, poor type resistors and condensers, etc. The only effective way this noise can be overcome is to use high quality parts and low-noise valves, or more in keeping with our modern times, transistors.

However, this noise limiter which I am reviewing is more for the types of noise encountered by the Amateur or s.w.l. with mobile receiving equipment. A classical example of this is the interference radiated by the ignition system of a car. The pulses from the ignition system are of high intensity but short duration, the time between pulses being greater than the actual duration of the pulses themselves. Even so, we all know the nuisance such pulses cause to us while trying to copy weak signals not only from the engine of our own car but the other vehicles using our overcrowded roads.

Electric motors cause considerable noise to be fed into radio receivers, as do the high tension wires which span our roads every few miles or so.

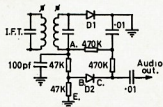
When an r.f. carrier is received by the set, the detector diode D1 conducts on alternate half-cycles making A negative with respect to E. AE is a conventional diode load consisting of two 47K ohm resistors in series. The potential difference between A and E is proportional to the strength of the carrier.

The 100 pF. capacitor in parallel with the diode load offers a low impedance to radio frequencies. Therefore if the

strength of the carrier varies at audio rate, the voltage appearing across AE will also vary at an audio rate.

Point A in the circuit is the usual take-off point of our audio output so in effect we have put the noise limiter in series with our detector stage and the audio output stage.

There is a negative voltage appearing between point D and earth but it cannot vary at an audio rate because of the high value of the resistance between A and D and the presence of the 0.01 μ F. capacitor. Therefore the voltage between D and earth is simply equal to the voltage between A and E.



While all voltages in the circuit remain equal, our diode D2 will conduct audio signals to the audio amplifier because the anode is positive in respect to the cathode. Should, however, a sudden audio pulse appear across BE which is greater in amplitude than the average voltage across AE, the anode of the diode will become negative with respect to the cathode and the pulse will not be transferred to the audio amplifier. In point of fact, any signal appearing at point B that is not varying at audio rate will be rejected.

One disadvantage of this noise limiter is that when mobile and someone comes on the air to call on c.w., because of the facts already outlined, D2 will not conduct immediately and therefore somewhat clipped c.w. is the result. For this reason, and this reason only is switching necessary.

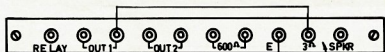
In my own mobile receiver I have used this noise limiter with first-class results and haven't even bothered to switch it in and out.

All resistors can be $\frac{1}{2}$ watt type and the capacitors of low voltage variety. This has the added advantage of giving a small piece of foreign equipment to be added to your already overcrowded mobile receiver. In fact, with careful layout this can be made on a piece of matrix board one inch square with plenty of room to spare.

The diode I used was an OA202 for this reason. This type of diode requires a small voltage to "fire" it, and when no signals are coming through, the diode will not conduct, but the instant any signal comes on the air, the diode passes it. This in effect gives a mild form of muting.

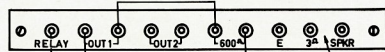
The gentleman to whom the credit belongs for passing this to me is Les Jenkins VK2ZBJ.

(A.) For 3 Ω Remote speaker.



To SW-R on TX terminal board. To ext. SPKR. To ext. SPKR. Remove link.

(B.) For 600 Ω Remote speaker.



To SW-R on TX terminal board. To 600 Ω line. To 600 Ω line. Remove link.

FIG. 8.

AMATEUR FREQUENCIES:
USE THEM OR LOSE THEM!



DF-2

FOSTER DYNAMIC MICROPHONES FOR HAND-DESK USE

SPECIFICATIONS:

Output Impedance 50 ohms or 50K ohms
Effective output level -55 db. [0 db. = (one) 1V. Microbar]
Frequency response 200 to 10,000 c.p.s.

OMNI-DIRECTIONAL DYNAMIC:

SIZE: 3" x 2-1/8" x 1".
Cable: 12 ft. of P.V.C.
Switch: on-off.
Desk Stand. Clip folds for hand use.
Colour: WHITE.
Plastic Diaphragm.

Retail Price

50K ohms

£2/14/0

+ Sales Tax 4/9

A QUALITY PRODUCT OF EXCELLENT DESIGN



Marketed by

ZEPHYR PRODUCTS PTY. LTD.

70 BATESFORD STREET, CHADSTONE, S.E.10, VIC.

Manufacturers of Radio and Electrical Equipment and Components

Agents: D. K. Northover & Co.; Neil Muller Ltd.; Homecrafts (Tas.) P/L; Jacoby, Mitchell & Co. P/L; T. H. Martin P/L.



STOCK TRANSFORMERS for Popular Projects!

PUBLICATION	PROJECT	A & R TRANSFORMER TYPE
ELEC. AUST. MAY 1966	1956 R-C Bridge	PT2150
ELEC. AUST. MAY 1966	THREE Band Short Wave Converter	PT5890
ELEC. AUST. APRIL 1966		Z3200 (2 req'd)
OUTLOOK JULY-AUG. 1965	Twin 5 Watt Class A Transistor Stereo Amp.	Z3212
OUTLOOK JAN.-FEB. 1966		PT5755
ELEC. AUST. APRIL 1966	Protected DC Supply	PT2150
ELEC. AUST. APRIL 1966	3 Band Double Change Receiver	PT2062
		Z3040
		OT E7/15
ELEC. AUST. MARCH 1966	Playmaster 113 Stereo Power Amp.	PT5721
		PT TD19 (2 req'd)
ELEC. AUST. FEB. 1966	A Four Channel Audio Mixer	PT2150 (for AC Supply)
ELEC. AUST. FEB. 1966	Playmaster 112 Transistor Control Unit	PT2150 (for AC Supply)
ELEC. AUST. FEB. 1966	The 1966 Vacuum Tube Voltmeter	PT5890
ELEC. AUST. JUNE 1965	A Two Band Short Wave Converter	PT5890
ELEC. AUST. DEC. 1965	A Simple Public Address Amp.	PT1093
		OT E7/15
ELEC. AUST. OCT.-NOV. 1965	Playmaster Program Source	PT1903
ELEC. AUST. SEPT. 1964	A Powered Monitor for Radio Systems	PT5890
ELEC. AUST. AUG. 1964	A Practical Photographic Timer	PT5890

Available from all Leading Stockists!

A & R TRANSFORMERS PTY. LTD. 42-46 Lexton Rd., Box Hill, Vic. (Box Hill P.O. Box 170) Phone 89 0238

SOME THOUGHTS ON HANG A.G.C. SYSTEMS*

CHET OPAL, K3CUW

THE many variations of Goodman's hang a.g.c. circuit¹ which have appeared in "QST" over the last eight years attest to the popularity of this type of automatic gain control for s.s.b. and c.w. reception. Unfortunately, the circuits used tend to be somewhat complicated and many Hams may be reluctant to use them, particularly since no suggestions are given as to how to adapt the systems to one's particular needs. My purpose here is to present a set of modifications applicable to any of the "hang" systems and, for the most part, to the simpler fast-attack slow-decay circuits now popular in commercial gear. The modifications include a circuit to prevent the a.g.c. from hanging up on isolated noise pops, and the addition of a cathode follower so that the a.g.c. line may be used for other purposes such as receiver muting or manual gain control. Methods of adapting gain-controlled amplifiers for good performance under fast attack a.g.c. conditions are also discussed.

in V1A. Part of the result is rectified in V2B, filtered, and dumped on to C1 through V2C. C1 will thus charge up immediately to the peak of the audio voltage appearing on the plate of V1A and will stay at that voltage until discharged through V1B. The resulting negative voltage is applied to the grids of the i.f. tubes to reduce the gain of the receiver. There should be no d.c. return to ground on the a.g.c. line itself or the a.g.c. voltage will not "hang" properly. The audio is stepped up in T1, rectified in V2A, and the resultant negative voltage is applied to C2 (ignoring CR1 for the moment) to cut off V1B. Because of the voltage gain in T1, the voltage across C2 is considerably more negative than that across C1, and V1B will not conduct again until C2 discharges through R2. As a result, the a.g.c. voltage will hang at a voltage proportional to the peak amplitude of the signal being received for a length of time determined by the step up in T1 and the time constant R2C2 (usually chosen to be about a second).

The voltage divider in the cathodes of V2A and V2B puts a back bias on these diodes and sets a threshold below which the a.g.c. will not operate. The actual values in this divider will depend on the particular receiver and the noise conditions on the band in use. It would be advisable to make the threshold adjustable temporarily, as shown in Fig. 2. After the a.g.c. has been in use for a while, a good compromise value could be determined and a fixed resistor substituted if desired.

IMMUNITY TO NOISE POPS

From the above description it is evident that a sudden noise peak will cause the a.g.c. to hang. Since man-made noise caused by electrical appliances or a v.f.o. swishing across the band can have a much higher peak amplitude than the signal being received, this will cause a one-second hole in the message before the a.g.c. returns to its normal operating point. The addition of a diode, resistor, and capacitor in the grid of V1B to correct this condition is shown in Fig. 1. The signal peak is fed directly through to C2, but as this capacitor is smaller by a factor of a hundred than the one normally used, the a.g.c. will only hang for about 10 milliseconds. The audio is fed to C3, but this capacitor must charge through a 1-megohm resistor and hence will not reach full voltage until several s.s.b. peaks, or at least 100 milliseconds on c.w., have gone by. When C3 is finally charged, CR1 conducts, placing C3 in parallel with C2, and the a.g.c. switches over to the full 1-second hang mode. Occasional pops will be filtered out; but a static burst, which would have blotted out a large part of the message anyway, will still cause the a.g.c. to hang for the full second. The values shown worked equally well with a 200-c.p.s. c.w. bandwidth or a 3-Kc. s.s.b. bandwidth, al-

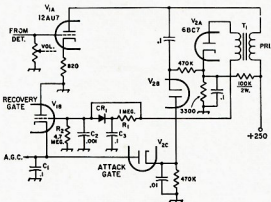


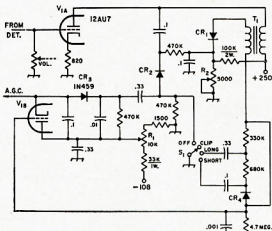
Fig. 1.—Audio "hang" a.g.c. modified for immunity to noise "pops." The circuit is the same as the original except for C2, CR1 and R1. All capacitances are in μ F.
CR1—200-p.i.v. silicon diode.
T1—1:3 audio transformer.

A slightly modified version of the hang a.g.c. system described by Luick² is shown in Fig. 1 and is typical of all circuits used. This particular version is audio driven, but circuits which obtain driving voltage from the i.f. amplifiers are quite similar. The important thing is that all selectivity precede the point at which the a.g.c. driving voltage is taken off. The systems work best when used with a receiver with good skirt selectivity and which recovers quickly when overloaded (that is, with a good receiver).

The circuit shown here works basically as follows: Audio is picked off the receiver volume control³ and amplified

Fig. 2.—Further evolution of the a.g.c. circuit with "Sensitivity (R1) and "Threshold" (R2) controls added. The function switch, S1, selects 10-m., 3-second and 1-second "hang" times.

CR1, CR2, CR4—Bargain silicon diodes.
CR3—High back resistance silicon diode. (1N459 or equiv.)



* Reprinted from "QST," December, 1965.

¹ Goodman, "Better A.G.C. for S.S.B. and Code Reception," "QST," January, 1957.

² Luick, "Improved A.G.C. for Sideband and C.W.," "QST," October, 1957.

³ If the audio becomes distorted when this connection is made, there is a clipping taking place in V1A and the audio take-off point should be moved closer to the detector. Two or three volts audio on a strong signal is more than adequate at the grid of this tube.

though if sideband only operation is contemplated, a resistance smaller than 1 megohm could be used. If the short time-constant mode is used alone, the circuit will behave like a clipper to keep ear-splitting signals in line while returning the receiver to full gain, when possible, to make sure that no weak signals are missed. The clipping introduces no harmonics on c.w. and very little distortion on sideband, consequently it is more comfortable to listen to than conventional audio clipping.

I.F. AMPLIFIER CONSIDERATIONS

The a.g.c. voltage comes on in a millisecond or less and will cause an irritating "thunk" when it comes into play unless the gain of the i.f. amplifiers can be changed at least as quickly. Unfortunately, the usual i.f. wiring is inadequate in this respect. The grids are decoupled from the a.g.c. line with large resistors and bypass capacitors;

cathodes may be grounded and the screens run off a stiff d.c. supply. Operating bias may then be obtained through the a.g.c. line (see below). This modification should also improve the cross-modulation performance of the amplifiers, although in present-day receivers most of the damage has been done long before the first i.f. tube.

ADDITIONAL MODIFICATIONS

I am presently using the circuit shown in Fig. 2 to generate the a.g.c. voltage. A switch to turn the a.g.c. off and to select various time constants has been incorporated, along with "sensitivity" and "threshold" controls. The negative 108-volt supply⁴ is an inconvenience, but if the cathodes are to be grounded some source of negative voltage will be required. As will be seen later, the supply is used elsewhere. The sensitivity control adds a fixed bias to the a.g.c. voltage and is best used if the threshold control is incorporated

volt supply. Now that the line can have some resistance to ground, the a.g.c. bus may be used for all sorts of auxiliary gain controls. Diodes CR5-B select the most negative voltage appearing at their cathodes and apply it to the a.g.c. line. Good muting for c.w. break-in with grid-block or differential keying is obtained by keying a 2N398A in step with the v.f.o. The base current divider on this transistor should be adjusted so that the transistor conducts when the v.f.o. is cut off and opens just as the v.f.o. comes on (this does not necessarily occur when the v.f.o. grid voltages goes to zero). If the station receiver has an output stage with the cathode resistor bypassed by an electrolytic capacitor, its cathode is a good source for the 6 volts or so required to cut off the transistor.

It is often desirable to operate the r.f. amplifier at full gain for all but the strongest signals. The circuit shown in Fig. 3 to apply delayed a.g.c. to the r.f. amplifier is nothing new, but it cannot be used without the cathode follower isolation stage. The 10-volt Zener diode worked with my receiver: if no more than two i.f. amplifiers are controlled, the value should be reduced to about 6.8 volts.

The S meter in the circuit as shown will indicate full scale with —24 volts on the a.g.c. line. It is possible to limit the maximum current by increasing the V3A cathode resistance, and to adjust the meter sensitivity by varying the resistor in series with the meter. If this is too much of a chore, the original "calibrated" S-meter circuit may be left intact and a new tube installed for V3.

FINAL CONSIDERATIONS

I would recommend that the a.g.c. circuit be built on a small chassis mounted inside the receiver cabinet. Shielded wire should be used from the receiver volume control to the grid of V1A; aside from that nothing is critical.

I have used one variant or another of this circuit with break-in c.w. over the last four years and am quite satisfied with the results, although the endless series of modifications has left the audio portion of my receiver a shambles! I hope that enough information has been presented above so that with a little experimentation one can come up with a hang a.g.c. system to suit his specific needs.

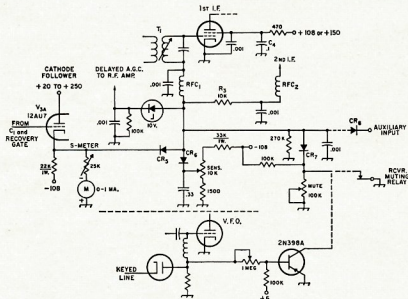


Fig. 3.—A cathode follower may be used to drive the a.g.c. line. This permits the use of additional circuitry for muting or break-in silencing. For example, the receiver can be muted by a negative voltage applied at "auxiliary input," by a "receiving muting relay," or by a negative voltage from the transmitter keying circuit applied via the 2N398A transistor. Delayed a.g.c. to the receiver r.f. amplifier is obtained by using a Zener diode. The time constants in the a.g.c. circuits have been reduced by substituting r.f. chokes for resistors (RFC1, RFC2).

C4—Audio bypass. May be omitted if screen voltage is stabilised.

CR5-CR8—Bargain silicon diodes.
R3—Grid filter resistor; omit if possible.

the result is a delay of as much as 1 millisecond between the time the a.g.c. is applied and the time it reaches the grids of the amplifiers. The response may be speeded up by replacing the grid resistors with small r.f. chokes and by removing any other resistors in the line. If instability resists, shielded wire, bypassed at strategic points, can be used for the a.g.c. bus. The cathodes and screens of the gain-controlled tubes are not normally bypassed for audio, causing poor performance while the gain is being changed. If popping persists on attack even after grid resistors are removed, the grids and screens should be bypassed with 0.1-μF. or larger capacitors, or better still, the

permanently into the receiver. Otherwise, the a.g.c. line may be clamped at some minimum negative value as shown in Fig. 2.

LOWERING THE IMPEDANCE OF THE A.G.C. BUS

A simple cathode follower will isolate the hang capacitor C1 from the old a.g.c. bus as shown in Fig. 3. The old S-meter amplifier tube may be used for V3A since the meter can now go directly to the a.g.c. line. The plate of this tube must go to a stiff 20 to 250-

⁴The negative supply need not be 108 volts, but it should be high enough that a full range of gain control can be obtained.

SUBSCRIPTIONS DUE

All members of the W.I.A. are reminded that annual subscriptions are now due and should be paid promptly to their Divisional Secretary. Non financial members will not receive a copy of "A.R." and back copies may not be available upon request. To preserve continuity of your files of "A.R." please pay your annual subscription now.

1966 JOHN MOYLE NATIONAL FIELD DAY RESULTS

It was with anticipation that the Contest Committee altered the rules of this Contest in an endeavour to encourage more operators in to the field. The results show that approximately the same numbers participated as in previous years.

As most comments received, praised the rules, 1967 rules will only be modified slightly, by the possible addition of "cross mode operating is permitted."

The table of results has been produced from information gleaned from the logs, and is as accurate as possible. A well laid out front sheet, as required by the rules of all Contests is a great help to the Committee.

With the upsurge in s.s.b. activity, it was decided that if the power restriction was lifted, more stations would participate using s.s.b. transceiver type of equipment. Unfortunately this did not eventuate, as no increase in activity in this sphere was noted. Their non-participation was a sad reflection on their interest in s.s.b., and the money they spent buying portable transceivers.

Reported below are some of the comments attached to logs:-

VK2AAH/P and gang: "The rules are right on the ball now for multiple and single operators."

VK2SS/P expresses satisfaction at the inclusion of a six-hour duration, and the rules and scoring are much what he desires.

VK2YB/P comments that the six-hour period suits single operators who do not want to camp out for the Contest, and that cross-mode operating should be allowed.

VK2JM/P makes many comments on the six-hour period, asks that cross-mode be allowed, and finishes off by saying that the Contest is a worthwhile one.

VK3AWI/P writes that they had nocturnal visitors to their site. Apparently some cows, or bulls, wandered up to their generator and commenced licking it. Perhaps they had been watching t.v. and had seen the ad: "Light up a . . ."

VK3HE/P states that he has always been a single operator in the Contest, and regards the six-hour period section an excellent move.

VK3RN/P writes on behalf of VK-3APC club members, who operated in various capacities and groups, saying that the power strike was the cause of a few minutes panic as the alternators to be used in the field were put in grave doubt as to their availability. He finished by writing that, as usual, they learnt a few more lessons, not the least being to check the petrol for water!

VK5WC/P writes how he enjoyed the Contest as much as any F.D. Contest, but was disappointed at the lack of fixed stations. He doesn't see why cross-mode is not permitted. Access to his site was over a severe, bumpy, rock-strewn track, eight miles of the Wirrappa-Pimba Road.

VK5ZF/P states: "New Contest rules are excellent, but registers a strong protest against the use of G.M.T."

An incomplete list (because of lack of information on front sheets of logs) of equipment in use for the Contest is as follows: Type 3, 522, home made, Swan 240, FL100B, ATR2C, No. 19, KWM2, Galaxy 5, Drake, NCX5, No. 122, Command, HRO, BC348, AMR300, Geloso, Eddystone, and Swan. Aerials in use were mostly ground planes on v.h.f., with Vee and long wires favoured for the h.f. bands.

Whereas the six-hour duration section was intended as a continuous per-

iod of operation, no penalty was imposed for other forms of time periods. Next year's rules will be clearer on this point, no doubt allowing any number of periods of operating totalling six hours.

As this is a Contest for field operation, this Committee will try various inducements to bring out stations in to the field. If you would like to suggest a means of accomplishing this, the Contest Committee would be pleased to hear from you. —F.C.C.

TRANSMITTING RESULTS

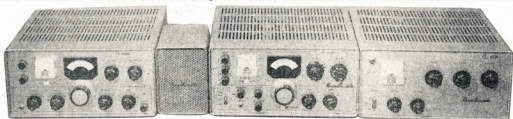
Call Sign	Section	Div. 6 or 24 Hr.	No. of Ops.	Equip. In Use	Power Input	Contacts	Pts.	Certificate For
VK2SS/P	A	6	1	H.B.	9	23	173	Low Pwr. Op./Pt.
40F/P	A	6	1	Disp.	10	6	39	
5SS/P	A	6	1	Disp.	11	17	155	Low Pwr. Op./Pt.
6ZAG/P	A	6	1	Disp.	10	5	10	
7JF/P	A	6	1	H.B.	20	32	301	1st 6 Hr. Phone
2YB/P	B	6	1	Disp.	11	26	159	Low Pwr. Op./Pt.
2JM/P	B	6	1	Disp.	11	22	171	1st 6 Hr. C.W.
3HE/P	C	6	1	Disp.	5	26	152	1st 6 Hr. Open
4UC/P	C	6	1	Disp.	16	24	151	Low Pwr. Op./Pt.
3YS/P	D	6	3	Comm.	3/120/240	96	539	1st 6 Hr. Mul. Op.
3QZ/P	D	6	4	H.B.	6/10/15	38	206	Low Pwr. Op./Pt.
3RJ	E	6	1	Comm.	25	19	240	1st 6 Hr. Fix. Stn.
5FJ	E	6	1	H.B.	100	9	125	
5WC/P	A	24	1	Comm.	25	49	413	1st 24 Hr. Phone
6MM/P	A	24	1	Comm.	7	12	76	Low Pwr. Op./Pt.
7JO/P	A	24	1	H.B.	6	15	118	Low Pwr. Op./Pt.
2AGI/P	B	24	1	Disp.	7	57	403	1st 24 Hr. C.W.
5ZF/P	B	24	1	Disp.	15	33	265	Low Pwr. Op./Pt.
5ZF/P	C	24	1	Disp.	15	52	352	1st 24 Hr. Open
1ACA/P	D	24	6	H.B.	100	152	1206	
2AAH/P	D	24	8	H.B.		730	3969	1st 24 Hr. Mul. Op.
2GN/P	D	24	10	H.B.		196	1218	
2ATZ/P	D	24	3	Comm.	20	61	479	Low Pwr. Op./Pt.
3RN/P	D	24	14	H.B.		414	2649	
3AWI/P	D	24	10	H.B.		396	2170	
3AHZ/P	D	24	5	H.B.		267	1516	
3AAW/P	D	24	5	Disp.	12	42	286	
4CS/P	D	24	4	Disp.		112	805	
9XI/P	D	24		Comm.		96	583	
2AEC	E	24	1	H.B.		16	225	
2ZO	E	24	1	H.B.		5	65	
3XB	E	24	1	Comm.		71	905	Merit for working No. of Field Stns.
3ANG	E	24	1	H.B.	20/56	34	390	
3EF	E	24	1	Comm.		28	340	
5NM	E	24	1	H.B.	30	9	125	
6KH	E	24	1			5	75	
7SM	E	24	1	Comm.		65	950	1st 24 Hr. Fix. St.

RECEIVING RESULTS

L2033	200	1st in	Call Area	J. Ross (VK5)	880	"	"	"
L3229	995	"	"	L5015	465	"	"	"
L3042	755	"	"	L5065	310	"	"	"
K. Cunningham (VK4)	315	"	"	L6028	42	"	"	"
		"	"	L7031	905	"	"	"

F-SERIES S.S.B. EQUIPMENT

PROFESSIONAL QUALITY AT AMATEUR PRICES



**COMPACT TABLE-TOP STATION—MECHANICAL FILTER SYSTEM
FIVE BANDS — 80-10 METRES. TRANSCEIVE OR NORMAL OPERATION**

FR-100B: RECEIVER, S.S.B.-A.M.-C.W., dual conversion, with crystal locked front end, two mechanical filters for best reception of s.s.b. and a.m., high reduction precision gear driven dial reads to 1 Kc. Crystal filter for c.w. A.n.l., "S" meter, a.g.c., s.s.b. clarifier, built-in monitor. Additional crystals for 100 Kc. calibrator, full 10 mc coverage, WWV and three s.w. ranges. A professional quality receiver for the Amateur or discriminating S.w.l. £209½ (\$419) inc. S.T.

FL-200B: TRANSMITTER, S.S.B.-A.M.-C.W., 240w. p.e.p. input with two 6JS6 (similar 6DQ5) tubes in p.a. working within ratings for longer life. Solidly constructed and neatly wired, with high quality components, ceramic bandswitch, Kokusai M.F., built-in solid state power supply, antenna relay, etc. All plugs, inst. manual and p.b. microphone supplied. Nothing else to buy. Cabinets beautifully lacquered in dark driftwood wrinkle. Satin finish panel.

C.W. Men: This is a first class rig for you too—break-in operation, T9X note, clean chirpless keying, v.f.o. runs continuously. £245 (\$490) inc. S.T.

Enables operation on the three modes without necessity for compromise. Fully imported. Used by Australia's leading Phone DX'er.

NEW! To be available soon: FT-100 Transceiver, FL-50 Basic S.s.b. Exciter, V.f.o., L.F. Filters, etc., all made by Yaesu Musen Co., of Japan.

Brochure available from
the Australian Agents:

BAIL ELECTRONIC SERVICES

60 SHANNON ST., BOX HILL NORTH, VIC. 89-2213

N.S.W. Enquirers contact:

MOSMAN TELEVISION SERVICES

11 Ruby Street, Mosman. Phone 96-5342

NOW AVAILABLE—

THE 1966 EDITION

★ A.R.R.L.—Radio Amateur's Handbook

The Standard Manual of Amateur Radio Communication

Price \$6.10 posted, or 58/6 and postage 2/6

NOW AVAILABLE—

★ The Radio Transistor Handbook

by Stoner & Earnshaw.

Price \$6.65 posted, or 64/9 and postage 1/9

THIS UP-TO-DATE HANDBOOK COVERS A WIDE RANGE OF COMMUNICATION
FOR BOTH AMATEUR RADIO & COMMERCIAL APPLICATIONS

McGILL'S AUTHORISED NEWSAGENCY

Established 1860

183-185 ELIZABETH STREET, MELBOURNE, C.1, VIC.

"The G.P.O. is opposite"

Phones: 60-1475--6-7

"Fifty and Over"

By ROY HARTKOPF

"Hello VK3ZFC. Hello VK3ZFC. Hello VK3ZFC. This is VK3ZOM calling you. This is VK3ZOM calling you. Come in please. Over."

"Hello VK3ZFC. Hello VK3ZFC. This is VK3ZOM returning. Good evening, Bert. Very good signal here. Readability 5, strength 7. By the way you didn't give me a report. VK3ZFC, VK3ZFC. This is VK3ZOM listening for you. Over."

"Hello VK3ZFC. Hello VK3ZFC. This is VK3ZOM returning. The report's the same as last time, you say? And the time before. And the time before that? I suppose it would be, when you come to think of it. After all, we're only a mile away from each other, and I don't suppose the ionospheric conditions would vary much. Of course, I'm only new to radio and wouldn't really know. By the way, Bert, I notice you only say 'ZOM' and 'ZFC.' The instruction book tells us to use our full call signs with the 'VK3' in case someone in another State or overseas is listening. I think we should do what the book tells us, shouldn't we? VK3ZFC, VK3ZFC. This is VK3ZOM listening for you. Over."

"Hello VK3ZFC. Hello VK3ZFC. This is VK3ZOM returning. How far would I expect to get with a 6AK5 as a final on 6 metres? Well one never really knows, does one? There might be something in the ionosphere; or maybe the signal could bounce off a satellite or something. Though I must admit I don't seem to get out as well as I did when I was on higher power last year with the 7A6. When I had that I used to be able to talk to Dave, and he was more than six miles away. But at least I don't get very many t.v.i. complaints nowadays. After all, one must run one's station in the best traditions of radio communication, mustn't one? VK3ZFC, VK3ZFC. This is VK3ZOM listening for you. Come in please. Over."

"Hello VK3ZFC. Hello VK3ZFC. This is VK3ZOM returning. I must say, Bert, that I think your remarks were rather unkind. I know we're entitled to run 150 watts. I know that the t.v. set from London and twenty megacycles wide and that the six metre band's only a quarter of a megacycle away from Channel zero sound, and that's why I have a 6AK5 for a final. But I'm sure the authorities have the interests of the Amateur at heart and they're doing everything they can to encourage Amateur Radio. After all, we're allowed to talk to each other as often as we like. Oh, that reminds me. Would you tell Jim that . . . Oh, I nearly forgot. We're not allowed to pass on messages, are we. Never mind, I'll phone you as soon as we finish and tell you then. VK3ZFC, VK3ZFC. This is VK3ZOM listening for you. Come in please. Over."

"Hello VK3ZFC. Hello VK3ZFC. This is VK3ZOM returning. Really, Bert. You know the instruction book says we shouldn't use that kind of language over the air. And besides I'm sure they mean well and they're doing the best they can. Anyway, suppose we

change the subject. How is your Morse practice coming along? VK3ZFC, VK3ZFC. This is VK3ZOM listening for you. Come in please. Over."

"Hello VK3ZFC. Hello VK3ZFC. This is VK3ZOM returning. Yes Bert, I understand how you feel. We're not allowed to use Morse on the air until we've passed the Morse test of 14 words per minute and then of course we'd never use it anyway. It would be nice to be able to use some band below 50 megacycles, but the book says we mustn't do that until we pass the Morse test. I suppose one could pass it if one gave up radio completely for a year or two, but I had to give up radio for five years to get my diploma in communication and if I give it away for another couple of years I'll forget all I ever knew about it. VK3ZFC, VK3ZFC. This is VK3ZOM listening for you. Come in please. Over."

"Hello VK3ZFC. Hello VK3ZFC. This is VK3ZOM returning. Oh, no, Bert. It isn't like that at all. The diploma course hasn't actually got anything to do with radio. We did lots and lots of things like maths, and chemistry and applied mechanics and physics and even English. There was something about receiving. All bits and pieces. I didn't understand it much but I managed to get through the exam. Of course, it doesn't really matter, because as long as you've got a diploma you don't actually need to know anything. What's that? John wants me on the phone? I'm sorry, Bert, I'll have to go. John's on the phone. VK3ZFC, VK3ZFC. This is VK3ZOM saying thank you for a very interesting contact. 73 and I hope to hear you again soon. This is VK3ZOM signing off and clear and VK3ZOM is closing down."

"Hello John. Bowling? Yes, sure. No, I wasn't doing anything. Just the usual talk with Bert. Funny chap. Seems to have a chip on his shoulder. Maybe it's because he takes radio seriously. Yes. I'll be round in five minutes. See you. Bye."

...

VS9MP, MALDIVES IS.



Stan Butlin commenced activity in October 1953. He runs 80w on 30, 40 and 20 mx. Uses c.w. and a.s.b. Is on daily, mainly on 20 after 1200z. Easy to pick by those calling him. Excellent op. and QSL is certain, via W2CTN. Stan's home call is G3MRP. He is a member of F.O.C., T.O.P.S. and R.A.F.A.S. Equipment used is commercial product, the rx being SR690. Antennae dipoles. DXCC almost 200. Main object of activity is to give all he can a QSO with Maldiva Is. He will be returning to U.K. later this year. QTH is P1921850, Sgt. S. J. Butlin, Sgts. Mess., R.A.F. Gun, Maldiva Is., B.F.P.O. 180, C.O. G.P.O., London; or via W2CTN or R.S.G.B.

(Only other activity from this rare spot is the club station VS9MB.)

W.I.A. D.X.C.C.

Listed below are the highest twelve members in each section. New members and those whose totals have been amended will also be shown.

PHONE

Call	Cer.	C'tnt-	Call	Cer.	C'tnt-
	No.	ries		No.	ries
VK3MS	24	320	VK4JZ	51	261
VK3AHO	51	323	VK4HJ	12	248
VK3RU	2	313	VK4DE	65	238
VK3AB	45	312	VK3TL	62	237
VK3MK	43	310	VK2AAK	58	219
VK4FJ	21	292	VK3KW	4	211

Amendments:

VK2APK	64	301	VK4KS	9	164
--------	----	-----	-------	---	-----

C.W.

Call	Cer.	C'tnt-	Call	Cer.	C'tnt-
	No.	ries		No.	ries
VK3KB	10	340	VK3NC	19	296
VK3CX	26	313	VK3AHQ	19	281
VK3QZ	5	308	VK3EO	2	278
VK4FJ	29	306	VK3ARX	66	270
VK2ADE	61	308	VK3RU	18	265
VK2AGH	71	290	VK3XB	75	257

New Members:

VK4UC	84	104
-------	----	-----

Amendments:

VK3YL	39	254	VK2APK	76	242
-------	----	-----	--------	----	-----

VK3JTL 18 233

OPEN

Call	Cer.	C'tnt-	Call	Cer.	C'tnt-
	No.	ries		No.	ries
VK2ADE	28	320	VK2VN	18	290
VK2AGH	83	323	VK3NC	77	287
VK3RU	8	320	VK4HR	7	281
VK4FJ	32	315	VK3IA	43	271
VK3EMK	74	309	VK3TL	85	267
VK2ACX	6	300	VK3APK	82	254

New Members:

VK4KS	24	198
-------	----	-----



TECHNICAL ARTICLES

Readers are requested to submit articles for publication in "A.R.," in particular constructional articles, photographs of stations and gear, together with articles suitable for beginners, are required.

Manuscripts should preferably be typewritten but if handwritten please double space the writing. Drawings will be done by "A.R." staff.

Photographs will be returned if the sender's name and address is shown on the back of each photograph submitted.

Please address all articles to the
EDITOR "A.R."
P.O. BOX 36,
EAST MELBOURNE, C.2,
VICTORIA.

REMEMBRANCE DAY CONTEST, 1966

A perpetual trophy is awarded annually for competition between Divisions. It is inscribed with the names of those who made the supreme sacrifice, and so perpetuates their memory throughout Amateur Radio in Australia.

The name of the winning Division each year is also inscribed on the trophy and in addition, the winning Division will receive a suitably inscribed Certificate.

Objects

Amateurs in each Call Area, including Australian Mandated Territories and Australian Antarctica will endeavour to contact Amateurs in other Call Areas. In addition, Amateurs will endeavour to contact any other Amateurs on the authorised bands above 52 Mcs. (i.e., intra-state contacts will be permitted in the v.h.f./u.h.f. bands.)

Contest Date

0800 hrs. G.M.T., Saturday, 13th August, 1966, to 0759 hrs. G.M.T., Sunday, 14th August, 1966.

All Amateur Stations are requested to observe 15 minutes' silence before the commencement of the contest on the Saturday afternoon. An appropriate broadcast will be relayed from all Divisional Stations during this period.

RULES

1. There shall be five sections to the Contest:—

- (a) Transmitting Phone.
- (b) Transmitting C.w.
- (c) Transmitting Open.
- (d) Receiving Open.
- (e) Transmitting Open—v.h.f./u.h.f. only.

2. All Australian Amateurs may enter the Contest whether their stations are fixed, portable or mobile. Members and non-members will be eligible for awards.

3. All authorised Amateur bands may be used and cross-mode operation is permitted. Cross-band operation is not permitted.

4. Amateurs may operate on both Phone and C.w. during the Contest, i.e., phone to phone or C.w. to C.w. or Phone to C.w. However only one entry may be submitted for sections (a) to (d) in 1. A separate entry may

be submitted for section (e) in 1. An open log will be one in which points are claimed for both phone and C.w. transmissions. Refer to Rule 11 concerning Log entries.

5. For Scoring, only one contact per station per band is allowed. However, a second scoring contact can be made on the same band using the alternate mode. Arranged schedules for contacts on the other bands are prohibited.

6. Multi-operator stations are not permitted. Although log keepers are permitted only the licensed operator is allowed to make contact under his own call sign. Should two or more wish

followed by call of the station they are operating, then the word "log" followed by their own call sign, e.g., "CQ Remembrance Day from VK4BBB log VK4BAA."

C.w.: Substitute operators will call "CQ RD de" followed by the group call sign comprising the call of the station they are operating, an oblique stroke and their own call, e.g., "CQ RD de VK4BBB/VK4BAA."

Contestants receiving signals from a substitute operator will qualify for points by recording the call sign of the substitute operator only.

7. Entrants must operate within the terms of their licences.

8. Cyphers—Before points may be claimed for a contact, serial numbers must be exchanged and acknowledged. The serial number of five or six figures will be made up of the RS (telephony) or RST (C.w.) reports plus three figures, that will increase in value by one for each successive contact. If any contestant reaches 999 he will start again with 001.

9. Entries must be set out as shown in the example, using ONLY ONE SIDE of the paper and wherever possible standard W.I.A. Log Sheets should be used. Entries must be clearly marked "Remembrance Day Contest 1966" and must be postmarked not later than 5th September, 1966. Address them to "Federal Contest Manager, W.I.A., G.P.O. Box N1002, Perth, W. Aust." Late entries will be disqualified.

10. Scoring will be based on the table shown. A bonus of 25 points may be claimed for the first contact with other call areas on each of the bands 52 Mcs. and above.

SCORING TABLE

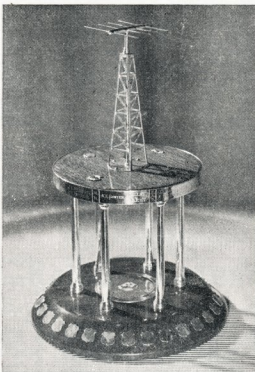
To

		VK0	VK1-2	VK3	VK4	VK5-8	VK6	VK7	VK9
From	VK0	—	6	6	6	6	6	6	6
	VK1-2	6	—	1	2	3	5	4	6
	VK3	6	1	—	3	2	5	4	6
	VK4	6	1	2	—	3	6	5	4
	VK5-8	6	2	1	3	—	5	4	6
	VK6	6	1	2	4	3	—	5	6
	VK7	6	2	1	4	3	5	—	6
	VK9	6	1	2	3	4	5	6	—

Note.—Read table from left to right for points for the various call areas.

In addition, all intrastate contacts on bands 52 Mcs. and above are worth 1 point each.

Portable Operation: Log scores of operators working outside their own Call Area will be credited to that Call Area in which operation takes place.



Remembrance Day Contest Trophy

to operate any particular station, each will be considered a contestant and must submit a separate log under his own call sign. Such contestants shall be referred to as "substitute operators" for the purposes of these Rules and their operating procedure must be as follows:—

Phone: Substitute operators will call "CQ RD" or "CQ Remembrance Day"

EXAMPLE OF TRANSMITTING LOG

Date/Time G.M.T.	Band	Emission and Power	Call Sign Worked	RST No. Sent	RST No. Rcvd.	V.h.f. Bonus	Points Claim.
Aug. '66							
13 0610	7 Mc.	A3 (a)	VK5PS	58002	—		2
13 0612			VK8RU	59007	—		5
13 1035	52 "	A3 "	VK4ZAZ	50010	—		28
13 1040			VK3ALZ	59025	—		1

Note.—Standard W.I.A. Log Sheets may be used to follow above form.

EXAMPLE OF RECEIVING LOG (VICTORIAN S.W.L.)

Date/Time G.M.T.	Band	Emission	Call Sign Heard	RST No. Sent	RST No. Rcvd.	Station Called	V.h.f. Bonus	Points Claim.
Aug. '66								
13 0610	7 Mc.	A3 (a)	VK5PS	58002	—	VK8RU	—	2
13 0612			VK8RU	59007	—	VK7EJ	—	5
13 1035	52 "	A3 "	VK4ZAZ	50010	—	VK5ZDR	25	28
13 1040			VK3ALZ	59025	—	VK3QV	—	1

Note.—Standard W.I.A. Log Sheets may be used to follow the above form.

e.g. VK5PZ/2. His score counts towards N.S.W. total points score.

11. All logs will be set as in the example shown and in addition will carry a front sheet showing the following information:—

Name Section
Address Call Sign
..... Claimed Score

No. of Contacts
Declaration: I hereby certify that I have operated in accordance with the Rules and spirit of the Contest.

Signed
Date

All contacts made during the Contest must be shown in the log submitted (see Rule 4). If an invalid contact is made it must be shown but no score claimed.

Entrants in the Open Sections must show C.w. and Phone contacts in numerical sequence.

12. The Federal Contest Manager has the right to disqualify any entrant who, during the Contest, has not observed the regulations or who has consistently departed from the accepted code of operating ethics. The Federal Contest Manager also has the right to disallow any illegible, incomplete or incorrectly set-out logs.

13. The ruling of the Federal Contest Manager of the W.I.A. is final and no disputes will be discussed.

Awards

Certificates will be awarded to the top scoring stations in sections (a) to (c) of Rule 1 above in each call area. VK1 and VK8 will count as separate areas for awards. There will be no outright winner for Australia. Further Certificates may be awarded at the discretion of the Federal Contest Manager.

The Division to which the Trophy will be awarded shall be determined in the following way.

To the average of the top six logs shall be added a bonus arrived at by adding to this average the ratio of logs entered to the number of State Licensees (excluding Limited Licensees) multiplied by the total points from all entries in sections (a), (b) and (c) of Rule 1.

Average of the top six logs +

Logs Entered	Total of Points
State Licensees ×	from all Entrants
Exclud. Z Calls	Set. (a) (b) (c)

VK1 scores will not be included with VK2 nor VK8 with VK5.

Acceptable logs for all sections shall show at least five valid contacts.

The trophy shall be forwarded to the winning Division in its container and will be held by that Division for the specified period.

RECEIVING SECTION (Section D)

1. This section is open to all Short Wave Listeners in Australia, but no active transmitting station may enter.

2. Contest times and loggings of stations on each band are as for transmitting.

3. All logs shall be set out as shown in the example. The scoring

table to be used is the same as that used for transmitting entrants and points must be claimed on the basis of the State in which the receiving station is located. A sample is given to clarify the position.

It is not sufficient to log a station calling CQ—the number he passes in a contact must be logged.

It is not permissible to log a station in the same call area as the receiving station on the m.f. and h.f. bands 1.8–30 Mcs., but on bands 52 Mcs. and above such stations may be logged, once only per band, for one point. See example given. VK1/VK2 and VK5/VK8 are considered to be the same area for scoring purposes.

4. A station heard may be logged once on phone and once on C.w. for each band.

5. Club receiving stations may enter for the Receiving Section of the Contest, but will not be eligible for the single operator award. However, if sufficient entries are received a special award may be given to the top receiving station in Australia. All operators must sign the Declaration.

Awards

Certificates will be awarded to the highest scorers in each call area. Further Certificates may be awarded at the discretion of the Federal Contest Manager.

TRANSMITTING OPEN — VHF/UHF ONLY SECTION (SECTION E)

Additional Notes

1. This section was introduced in answer to the request by many Amateurs that provision be made for participation by Limited Licensees and other VHF/UHF operators. It is in the nature of an experiment and because of this, logs entered for section (e) at this juncture, will not be considered in the determination for the Trophy winner. In the light of future experience, response to this section by those it is intended to interest, and comments from all interested parties, other additions and changes may be made.

2. All intrastate contacts in the bands above 52 Mcs. will count for one point. Interstate contacts will be valued as in the table for MF/HF contacts including the bonus 25 points for the first contact with each new call area.

3. Entrants may submit logs for one Transmitting Section other than (e) and interstate VHF/UHF contacts may be included in both logs.

4. Logs must be set out in the standard manner prescribed.

Awards

Certificates will be awarded to the highest scorer in each call area.

Note I.—The Federal Contest Manager emphasises the need for strict observance of Rule 9 in the Transmitting Section and Rule 3 in the Receiving Section.

Note II.—Note that the use of G.M.T. is required in accordance with Institute Policy to encourage the use of G.M.T. by Australian Amateurs.

LOW DRIFT CRYSTALS

FOR
**AMATEUR
BANDS**

ACCURACY 0.01% OF
STATED FREQUENCY

3.5 and 7 Mc.
Unmounted, £2/10/0
Mounted, £3/0/0

12.5 and 14 Mc.
Fundamental Crystals,
"Low Drift"
Mounted only, £5.

THESE PRICES DO NOT
INCLUDE SALES TAX

Spot Frequency Crystals
Prices on Application.

Regrinds £1/10/0

MAXWELL HOWDEN
15 CLAREMONT CRES.,
CANTERBURY, E.7,
VICTORIA

THE NEW "A.R." LOG BOOK

IS NOW AVAILABLE

Larger, spiral-bound pages
with more writing space.

Price 7/6 each
including Postage

Obtainable from your Divisional
Secretary, or W.I.A., P.O. Box 36,
East Melbourne, C.2, Victoria.

Sideband Electronics Engineering

P.O. BOX 23. SPRINGWOOD, N.S.W.

Telephone Springwood 51-1394

To power a modern S.S.B. Transceiver properly, a well-regulated power supply is essential for maximum linear operation and minimum distortion. It is incorrect to obtain the 275 volt and largely varying 800 volt drain from one transformer secondary winding! It either takes an oversize transformer with separate secondaries for low and high voltages or a separate transformer for the 800 volt supply, as used in my own a.c. power supply design. Their weight is almost twice that of imported supplies or locally made copies of them!

For the best deal in S.S.B. gear and accessories, SWAN, GALAXY, HY-GAIN Antennas, etc., check earlier advertisements in "Amateur Radio" and contact me for advice and quotes.—Arie Bles.

BRIGHT STAR CRYSTALS

FOR ACCURACY, STABILITY, ACTIVITY
AND OUTPUT



Our Crystals cover all types and frequencies in common use and include overtone, plated and vacuum mounted. Holders include the following: DC11, FT243, HC-6U, CRA, B7G, Octal, HC-18U:

THE FOLLOWING FISHING-BOAT FREQUENCIES ARE AVAILABLE IN FT243 HOLDERS:—
6280, 4095, 4535, 2760, 2524 Kc.

5.500 Kc. T.V. Sweep Generator Crystals, £3/12/6
100 Kc. and 1000 Kc. Frequency Standard,
£8/10/0 plus 12½% Sales Tax.

Immediate delivery on all above types.

AUDIO AND ULTRASONIC CRYSTALS—Prices on application.
455 Kc. Filter Crystals, vacuum mounted, £6/10/0 each plus 12½% Sales Tax.
ALSO AMATEUR TYPE CRYSTALS—3.5 AND 7 Mc. BAND.

Commercial—0.02% £3/12/6, 0.01% £3/15/6, plus 12½% Sales Tax.
Amateur—from £3 each, plus 12½% Sales Tax.
Regrinds—Amateur £1/10/0, Commercial £1/17/6.

CRYSTALS FOR TAXI AND BUSH FIRE SETS ALSO AVAILABLE.

We would be happy to advise and quote you.

New Zealand Representatives: Messrs. Carrell & Carrell, Box 2102, Auckland.
Contractors to Federal and State Government Departments.

BRIGHT STAR RADIO

LOT 6, EILEEN ROAD, CLAYTON, VIC. Phone 546-5076

With the co-operation of our overseas associates our crystal manufacturing methods are the latest.



NOW... PRINTED CIRCUITS TO YOUR OWN DESIGN!

Do you design your own circuits? All the advantages of printed circuits can be yours at modest cost. For many years Precision Windings have supplied printed circuits to Australian industry... and now streamlining of production techniques permits the economical manufacture of small quantities... even single circuit boards. You design and supply the artwork... we do the rest. Precision workmanship is guaranteed and delivery made within 7 days.

FREE!! As many enthusiasts will not be familiar with the preparation of "artwork", send a stamped, addressed envelope to us and we will forward a set of notes written to simplify preparation of "artwork". Instructions are clear and concise.

POST THIS COUPON NOW!

Please manufacture for me the printed circuits specified hereafter in accordance with the artwork supplied.

Number required..... Scale of artwork.....

Size.....	Area.....	D/N.....	
Phenolic paper circuits @ 5c per sq. in.			\$
Epoxy glass circuits @ 8c per sq. in.			\$
Epoxy glass circuits @ 10c per sq. in.			\$
Holes drilled @ 5 for 1c (2c ea.)			\$
Cost of photonegative (fixed cost)			\$3.00
Sales Tax (12½% or 25%)			\$
Packing and registered postage			\$0.50
			Total \$

Please find cheque/money order/postal notes for total of \$..... (All cheques and money orders should be made payable to Precision Windings.)

NAME..... (BLOCK LETTERS)

ADDRESS.....

STATE..... OCCUPATION.....



52 CAMBRO RD., CLAYTON, VIC. TEL. 546 7820



CENTRAL QUEENSLAND BRANCH DISPLAY

The display, set up by the Central Queensland Branch, in a Rockhampton shop window consisted of items of radio equipment ranging from a replica of the first radio valve ever produced to the latest communications equipment. Trophies, Certificates and awards won by local members were also displayed.

(Block by courtesy of Rockhampton "Morning Bulletin.")



BOEING DEMONSTRATES METEOR-BURST COMMUNICATION

Oceanographic Data Relayed with Help of Meteor Trails

A transmission system which hitches a ride from falling stars has been successfully demonstrated by The Boeing Co., Seattle, Wash., from the location of an underwater mountain in the Pacific Ocean. Known as meteor-burst communication, the system transmits data by bouncing radio signals off trails left by meteors entering the earth's atmosphere. It was designed by the Boeing anti-submarine warfare systems organization as a communications link for an oceanographic research programme conducted by the University of Washington.

In tests from Cobb Seamount, located 315 miles west of Grays Harbour, Wash., and 440 miles from Seattle, meteor-burst signals were received at Inglewood Research Site, near Issaquah, Wash., a total line-of-sight distance of 450 miles. System range is approximately 1,000 miles, according to Paul Pflueger, Boeing Aero-Space Division A.S.W. Systems Manager.

Millions of meteorites enter the earth's atmosphere daily, burning up quickly through air friction. As this occurs, an ionised trail is left which dissipates rapidly and eventually is absorbed in the ionosphere. The meteor's

trail above the ionosphere is the basis for the communications system developed by Boeing. Use of meteor trails to transmit data offers the advantages of greater stability and control of the radio signal, according to Pflueger. Unlike the ionosphere, which is used for conventional radio transmission, meteor trails are affected little by sun spots or other interference which can cause signal fadeout and static. A signal bounced off of a meteor trail continues along a more direct path than a signal reflected from the ionosphere. Most meteor trails exist only for fractions of a second over an extremely small area and this trail does not offer a multiplicity of reflected pathways as does the iono-

sphere. Another major advantage is that the equipment operates at low power and on v.h.f., thus avoiding the crowded h.f. bands.

The Boeing-designed system has a land-based, master control station. In operation, the station sends a probe signal skyward, seeking a meteor trail at the proper angle to reflect the signal downward to the ocean-based "slave" station. The reflected probe activates ocean surface and sub-surface measurement instruments which then transmit stored-up data using the same meteor trail as the probe signal. Boeing engineers have found that a frequency of 50 Mcs. provides the best equipment performance.

From "Frequency," July/Aug. 1965.

STANDARD STATIONS RECEIVED IN FAR EAST.

Frequency	Call	Emission
9,990.0	RTA	1-sec. and 0.1 sec. pulses.
10,000.0	RES/RMW Moscow	Carrier, 1-sec. time ticks; alternates carrier only.
10,004.0	RID	Carrier, 1-sec. and 0.1-sec. pulses; alternates no carrier, 1-sec. pulses with longer pulse on minute.
14,992.0	(RES/RWM)	1-sec. and 0.1-sec. pulses.
15,000.0	RES/RWM	Carrier, 1-sec. time ticks; alternates carrier only.
15,010.0	(RES/RWM)	1-sec. pulses.
20,000.0	BPV	Carrier and 1-sec. ticks.
20,008.0	Tientsin, China RID	Carrier, 1-sec. and 0.1-sec. pulses; alternates no carrier, 1-sec. pulses with longer pulse on minute.
21,800.0	(RID)	1-sec. and 0.1 sec. pulses.

From "Frequency," July/August, 1965.



WARBURTON FRANKI

NEWMARKET PACKAGED CIRCUIT AMPLIFIERS

SPECIFICATION DETAILS:

Performance Data	PC1	PC2	PC3	PC4	PC5	PC7	PC9
Power Output mW. ...	150	400	400	400	3W	800	Pre-Amp.
Input Impedance ohms ...	1.5K	1K	2.5K	220K	1.5K	1.5K	1M
Output Impedance—ohms ...	40	15	15	15	3	8	600
Supply Voltage—volts ...	9	9	9	9	12	9	9
Typical distortion % ...	2	3	3	3	3	3	1
Frequency response ...	300-15K	200-12K	200-12K	200-12K	50-12K	50-12K	20-20K
Overall Dimensions ...	2x1	2½x1½	2½x1½	2½x1½	5½x1½	3x1½	2x1
All ½ in. high							

PRICE \$5 \$6.27 \$6.27 \$6.27 \$12.47 \$7.53 \$4.50

Plus Sales Tax 12½% and postage.

SUGGESTED APPLICATIONS:

PC1—Audio Amplifier. Intercom. Amplifier. Lab. Instr. Amplifier.

PC2—Modulator Drive Stage. Church Hearing Aid Amplifier. Tape Replay Amplifier. Mine Communication Amp. Telemetry Audio Amp.

PC3—D.C. Relay Driver. Sound-level Meter Amp. Low power Battery Stereo. Heating and Ventilating Control Amp.

PC4—G.P. Amp. and Driver's Office Dictating Machines. Listening Booth Amps.

PC5—Portable Audio Amps. Car Radio Audio Amps. Servo Amplifier. Tape Relay Amp. Automation Drive Amp. Burglar Alarm Amp.

PC7—Tape Language Lab. Telephone Dictating Machine Amps. Control Amp. for Textile Machinery.

• Write or Call for Data Leaflet.

TRANSCEIVERS TWO1

3 Transistor Model

- RANGE—up to ½ mile depending on terrain
- ANTENNA 10 Section Telescopic.
- POWER SUPPLY—one 216 battery.
- SIZE—5½" x 2½" x 1½".
- WEIGHT—½ lb.

PRICE PER PAIR \$17.35 Plus 12½%. Pack & post 20 c.

Ideal for Sportsmen, Construction Workers, etc.

SILICON DIODES

IN3491—18 AMPS @ 50 P.I.V.

Available with either K or A to case, 75 c plus sales tax 12½%.

Heat Sink Adaptors to Suit, 25 c plus sales tax 12½%.

S10AR2—1 amp. @ 1000 P.I.V. \$1.20 plus S.T. 12½%

S15AR2—1 amp. @ 1500 P.I.V. \$2.00 " " "

IN3193—750 mA. @ 200 P.I.V. 40c " " "

IN3194—750 mA. @ 400 P.I.V. 55c " " "

IN3195—750 mA. @ 600 P.I.V. 75c " " "

Special! IRISH BRAND MYLAR RECORDING TAPE

American Professional Quality

3"	225'	70c	each	plus	sales	tax	12½%
5"	900'	\$2.25	"	"	"	"	"
5½"	1150'	\$3.00	"	"	"	"	"
7"	1800'	\$3.75	"	"	"	"	"
7"	2400'	\$5.55	"	"	"	"	"

Please add postage.

TELEVISION REPLACEMENT COMPONENTS

Telecomponents and Radar Brands Stocked.

Write or Call for Data and Price Lists.



WARBURTON FRANKI

220 PARK ST. SOUTH MELB., VIC. PHONE 30 lines 69-0151



• **TRADE ALSO SUPPLIED**

• Please include postage or freight with all orders

A Federal President's Annual Report

Gentlemen: It gives me considerable pleasure to present this report to the Federal Council on the occasion of the 30th Federal Convention of the Wireless Institute of Australia.

In this report, covering the period from April, 1965, to March, 1966, I shall convey to you a comprehensive survey of your Executive's activities and to generally summarise the nature and content of the work being done. As it proceeds, some of the major obstacles the Amateur Service is likely to meet in the years ahead.

Just a few days before you will recall from last year's Convention that Mr. Harold Hepburn took office as Vice-President and Mr. Kevin Williams as Treasurer, joining with Mr. Peter Williams (Secretary), Alfred Seedmans (Business Manager), Bill Mitchell (Communications Manager), David Rankin (Federal Activities and Contest Liaison Officer), and myself as Chairman and President.

I would first like to pay a tribute to the exemplary team spirit which prevailed from the commencement of the year's work. Following justifiable criticism on the protraction of time in producing the official minutes from the previous year's Convention, we proceeded to work with concerted energy and with the assistance of clear tape recordings of the proceedings, to complete the minutes within minutes within weeks of the conclusion of the Convention. This same co-operation and drive characterised the work throughout the year resulting in "getting things done" without the strain imposed on people who give of their spare time in an honorary capacity. In return the Division did not decline in ratifying the minutes and matters arising from the minutes have been attended to.

One of the largest projects undertaken by the Executive of the Federal Council of the W.I.A. in many years has been the almost complete re-organisation of the Department of Radio Stations in the Amateur Service. The Federal Council is aware that such an undertaking was not the Executive's work and this was not the task which was self imposed because the Executive was most unhappy with proposals received from the Central Office. Postmaster-General's Department by which certain amendments, additions and deletions were to be made to the functions of the Department of Radio Stations in the Amateur Service. The Executive's representations lodged at the highest possible level resulted in the full co-operation of the Department and the task was completed.

It is not my intention to bore you with the mechanics by which this was accomplished, but to state that the task was completed with the assistance of Mr. Harold Hepburn, Mr. Kevin Williams, and Mr. Peter Williams, who with assistance in the main from Harold Hepburn, Kevin Williams, and Peter Williams, expended scores of hours in a concentrated effort on the work involved.

I was able to attend a number of the meetings myself and cannot recall too highly of the intelligent and intellectual manner in which the vast problem of this re-write was undertaken. The project was systemised from the commencement and when drafts were finally exchanged between the Department and the Institute at the end of the year, there was complete unanimity of thinking, with no evident leaving a mere handful of problems at which both parties agreed to have another look. As the project was systemised, the meetings at which the project was being completed resulted in the resolution of all but one or two of the remaining problems. I am confident this will be resolved to our satisfaction in the near future.

It is true to say that we have not achieved our original aim of a complete re-write of the Amateur Service in the near future. There has been the necessity to give a little as well as take but the nett result has been a more useful device of many of the ambiguities and unrealistic restrictions which have "bugged" the Amateur Service for many years.

The most notable outcome of this project in my opinion is the report of the working group which has prevailed. It has required a great deal of tact and diplomacy to bring about a mutual trust and understanding between the project and the Government Department and I believe it sets an example to our own internal organisation. If by mutual trust and understanding of each other's problems a project such as this can be successfully completed between a Government Department and this Institute, then I feel strongly that the same can be achieved in our own deliberations on the major matter of Federation. If each of two sides can understand the other's point of view and are not prepared to give and take with trust and understanding then I believe that a final solution to a problem can never prevail.

In concluding this section of my report I would like to record my personal thanks to Michael Owen in particular, and to the other members who so ably assisted in the re-write of the Handbook of the Amateur Service. The more flexible operating rules for the Australian Amateur, but we have achieved a personal liaison with our own Administration which has never been bettered.

As I have mentioned Federation of the Institute I would like to also record at this stage the personal thanks to Michael Owen and John Battrock who, under co-optation by the Executive, gave up a week-end of their time during the year to produce this report. I would like to personally explain certain details of the proposed Federal Constitution which were in conflict with the N.S.W. Division. I believe some degree of success has been achieved and I am hopeful that the remaining problems will be resolved during the course of this Convention.

As far back as I can remember there have been instances of direct action by Divisional and/or individual Amateurs to obtain approval from the Department to engage in some activity which currently is not covered by the general regulations under which the Amateur Service operates, or to bring about some change in existing regulations. This has been done in one kind or another. Such direct action has generally resulted in a refusal and by the time the matter has reached Executive level a deal of amiable relations have been broken. The Executive has at times been placed in an embarrassing position.

During the year several matters were attended to by the Executive at Central Office level which could have saved a deal of wasted effort. The first was the matter of Woomera presented to the Executive in the first place. I mention in passing the permission to operate unattended V.H.F. beacon stations, a specific permission to operate a radio beacon station, power for the purposes of moonbounce experiments and permission for Amateurs within the Woomera area to use the Woomera Radio Club station to use other than the Woomera Radio Club station.

Whilst I agree that Federal Councillors can hardly be held responsible for direct action by an individual Amateur, I do lay the blame on the Federal Councillor if he permits his Division to take direct action directly on matters of this nature.

I would therefore again stress most strongly that this type of problem be directed to your Executive. The Executive is the body responsible for its existence, to speak for the Amateur Service at the proper level. Too often the local divisional committee has been the first to be reached at Central Office level and, in any case, consider they have no power to make a decision in the applicants' favour so they say "No".

The Youth Radio Scheme has continued to progress to the point where it may be considered too large to handle under the existing conditions. It appears to me to lack necessary Federal co-ordination.

However, the scheme is doing an immense amount of good with young people and many students have passed and received the various certificates and diplomas. The scheme has the privilege of presenting trophies to two of the first blind candidates to pass the elementary examination at the Victorian Institute for the Blind. But the scheme is doing a great deal of good for the blind and for the general public.

I believe the Y.R.S. to be one of the most powerful influences in which the Institute should be concerned. It is a service of a humanitarian service in interesting young people in a hobby but it is also serving a most useful purpose in a section of the normal education system.

October, 1965, saw yet another more-popular-than-ever year for the Institute. It was a year dedicated to the United Nations International Co-operation Year to celebrate which the Postmaster-General's Department issued a 2.6d. commemorative stamp.

Many more stations participated in this event than ever before, indicating not only the interest in the scheme but also the fact that also the interest Amateurs are taking in fostering scout activity in our field of communications. The Institute has had a very successful first annual event and I record here the thanks of the Institute as a whole to all those Amateurs who opened their shack doors during the week-end of the Scout Rally and welcomed groups of scouts and encouraging their interest.

I am pleased to report a great improvement in the conduct of the Divisional Councils under the control of the Federal Contests Manager, Neil Penfold. The VK6 Division are now conducting a contest which is of great interest to the Federal Contests Committee on behalf of the

Federal Council and I record my personal thanks to the members of the committee for a job well done, and also to David Rankin from the Executive who acted as liaison between the Handbook of the Amateur Service and the Executive. The Executive's work resulted in particularly smooth operation of an Institute activity which can only be classified as a difficult and time consuming one.

There is a growing trend in contest participation. Operation in contests is a valuable training ground for Amateurs who might at some time be called upon to serve in the defence forces. This fact of training is one of the claims most radio societies uphold as a strong reason for maintaining an Amateur Service together with other activities such as civil defence.

If we are losing participants I believe we should take a look at the situation to find out why. Are we tired of contests? Are there too many contests? Are our contest rules too complicated? Is our publicity not good enough? Or is it that we just can't be bothered?

Whatever the reason I believe corrective measures should be taken to increase activity. This not only is a training ground for operational purposes but it provides band occupancy, a matter which concerns all countries from the United Kingdom to the Australian Defence Forces. This facet of training is one of the claims most radio societies uphold as a strong reason for maintaining an Amateur Service together with other activities such as civil defence.

As there were no major disasters during the past year, the Wireless Institute Civil Emergency Network organisation did not have a spectacular year. The VK3 network was used to a limited degree during the first period of this year. The network did, however, operate a simulated emergency in conjunction with the A.R.L.L. and otherwise conducted practice operations.

Emergency network organisation is one of the most valuable opportunities the Amateur Service has of demonstrating its worth in the public service, and I therefore cannot stress enough the importance of maintaining these reserves in readiness for the day when they are called upon for assistance, whenever and wherever an emergency may eventuate.

The Federal QSL Bureau Officer, Ray Jones, of the Federal Amateur Radio Club, has also contributed of their time in their usual efficient manner. Reports from these two officers are being received by the Executive.

The Federal Historical Records Office has also provided a short report and it is encouraging to know that some of the backlog of material has been completed. However, there must be a lot of old material which could be made available to the Executive to assist in their work and I would ask Federal Councillors to keep the historical records in mind when moving among the members of their Division. Any valuable documents will be returned to the sender if so desired.

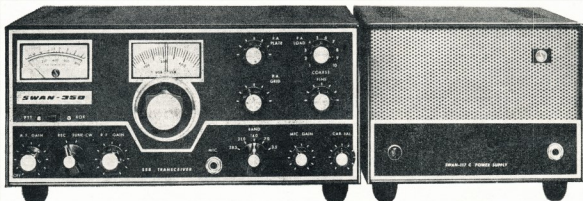
You will recall from the December, 1964, Executive Minutes that an offer from the A.R.L.L. headquarters had been extended to all member societies of the I.A.R.U. to handle individual subscriptions to the Magazine "QST" previously handled through central agencies.

After obtaining clarification of certain aspects of the offer, the Executive clearly indicated that either the W.I.A. undertake the work involved or it nominated an agency. After careful consideration the Executive decided to decline the offer to take up the offer and Mr. A.H. Seedmans agreed to accept responsibility of the undertaking. From the Treasurer's decision to take up the offer a small profit accrued by way of commission on each subscription. This was made available to the Executive to offset the cost of the subscription to a reduced cost of the publication to the subscriber.

Since the start of writing this report some 400 subscriptions have been handled and this figure is increasing each month. I would like to record my thanks to Mr. Seedmans for the time and effort he has put into the project and suggest to the Federal Council that the Divisional Councils encourage members to place their subscriptions to the Magazine "QST" at the benefit of the lower subscription rate available to them.

Another vital matter in any club, society or institution is its membership. This is the lifeblood of the organisation without which it cannot function. Although not spectacular, I am pleased to report that the membership figures available there has been a modest increase in membership in all Divisions with the exception of VK4. At the end of the year, 31 members over the period February, 1965, to February, 1966. The following are the membership figures for each division and are compared with the total

STILL AUSTRALIA'S MOST POPULAR S.S.B. EQUIPMENT



Swan SW350 Latest Model Transceiver only	£250	0	0	\$500.00
Swan SW350 Latest Model Transceiver. Fitted with opposite sideband and 100 Kc. cal. (Aust.)	£264	0	0	\$528.00
Swan SW350 Latest Model Transceiver. Fitted with opposite sideband and 100 Kc. cal. (Aust.), plus de luxe 240 a.c. power supply with speaker and all cables and plugs in matching cabinet	£300	0	0	\$600.00
Swan SW400 Latest Model De Luxe Transceiver only	£275	0	0	\$550.00
Swan SW406 Transistorised VFO, 5 band	£50	0	0	\$100.00
Swan SW420 Transistorised VFO, 20 band full coverage	£84	0	0	\$168.00
Swan SW410 Transistorised VFO, 5 band full coverage	£80	0	0	\$160.00
Swan VX1 5 Transistor VOX Unit	£25	0	0	\$50.00
Swan SW22 VFO Adaptor Unit (split channel)	£20	0	0	\$40.00
Swan SW260C de luxe 240v. a.c. Power Supply w/- speaker, in matching cabinet	£40	0	0	\$80.00
240v. a.c. Basic Power Supply, without cabinet	£35	0	0	\$70.00
Swan SS2 Opposite Sideband Kit (genuine)	£17	0	0	\$34.00
Swan 100 Kc Xtal Calibrator (genuine)	£17	0	0	\$34.00
Swan WFS500 12v. d.c. 500 watt Power Supply	£65	18	0	\$131.80
Opposite Sideband Kit (Aust.)	£3	15	0	\$7.50
100 Kc. Xtal Calibrator Kit (Aust.)	£11	16	0	\$23.60
P.T.T. Ceramic Microphones w/- plug	£5	18	0	\$11.80

OTHER ACCESSORIES AVAILABLE

Mobile whips, co-axial switches, plugs, sockets, spare parts, valves, plus full range of genuine SWAN spare parts. Easy terms available in N.S.W. and Victoria.

SWAN FACTORY DISTRIBUTOR:

W.F.S. ELECTRONICS SUPPLY CO.

227 Victoria Road, Rydalmere, N.S.W. 638-1715

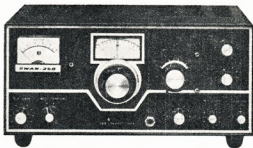
ATLANTIC RADIO

36 Oxford St., Woollahra, N.S.W. 31-7811

INTRODUCING THE . . .

SWAN-250 **6 METRE S.S.B. TRANSCEIVER**

SWAN SPEAKS YOUR LANGUAGE NOW ON VHF TOO!



SPECIFICATIONS:

- ★ 240 watts p.e.p. input, 180 watts c.w. input, 75 watts a.m. input.
- ★ Two 6146B tubes in Power Amplifier.
- ★ Complete band coverage, 50-54 Mc.
- ★ Velvet smooth vernier tuning covers 500 Kc., calibrated in 5 Kc. increments.
- ★ Transmits and receives on Upper Sideband.
- ★ 2.8 Kc. bandwidth with crystal filter at 10.7 Mc.
- ★ Single conversion design for minimum image and spurious.
- ★ 40 db. unwanted-sideband suppression, 50 db. carrier suppression.
- ★ Receiver noise figure better than 3 db. 6HA5 triode R.F. amp., 6HA5 triode mixer.

- ★ Audio response essentially flat from 300 to 3100 cycles.
- ★ Pi output coupling for matching wide range of load impedances.
- ★ Meter indicates relative output for optimum tuning and loading.
- ★ Provisions for adding 500 Kc. calibrator, or plug-in Vox unit.
- ★ Dimensions: 5½ in. high, 13 in. wide, 11 in. deep. Weight: 17 lb.

ACCESSORIES:

- 117-XC matching a.c. supply with speaker. 14-117, 12 v.d.c. supply, 500 Kc. crystal calib. kit. Plug-in VOX, model VX-1.

W.F.S. ELECTRONICS SUPPLY CO.
 227 Victoria Road, Rydalmere, N.S.W. 638-1715

ATLANTIC RADIO
 36 Oxford St., Woollahra, N.S.W. 31-7811

EDDYSTONE **DIE CAST** **INSTRUMENT BOXES**



These substantially made boxes are invaluable for many purposes and numerous applications will be found for them in the construction of electronic, radio and electrical apparatus. A high degree of electrical results from the thickness of the walls (average thickness is 3-32") aided by the close-fitting flanged lid supplied with each box. Again, mechanical protection of components mounted in the box is very good and, as one example, the box lends itself well to the construction of transistorised instruments. In some cases, it is convenient to mount components on the inside of the lid, the box proper then giving complete protection. In others, parts can be readily mounted in the box itself, the lid preventing the ingress of dust and other foreign bodies.



Available from Radio and Electrical Wholesalers.

Eddystone Catalogue now available.

896	4½" x 2½" x 1"	\$1.72
650	4½" x 3½" x 2"	\$2.48
845	7½" x 4½" x 2"	\$4.00
903	7½" x 4½" x 3"	\$4.32

Australian Agents: **R.H. Cunningham** (PTY.) LTD.

8 Bromham Place, 64 Alfred Street,
 Richmond, Vic. Milsom Point, N.S.W.
 42-1614 828-9066

Agents:
 Queensland: L. E. Boughen & Co., W.A.: H. J. McQuillan Pty. Ltd.,
 95 Central Avenue, Sherwood, 1017 Wellington Street, Perth.
 79-2207. 21-8911.

CONTEST CALENDAR 1966

4th/5th JUNE—CHC/FHC/HTH QSO Party.
2nd/4th JULY—Venezuelan Independence Contest (Phone only).
9th/10th JULY—R.S.G.B. 1.8 Mcs. "Summer" Contest.
13th/14th AUGUST—Remembrance Day Contest.
10th/11th SEPTEMBER—WAE Contest (Phone Section).
1st/2nd OCTOBER—VK-ZL-Oceania DX Contest (Phone Section).
8th/9th OCTOBER—VK-ZL-Oceania DX Contest (C.W. Section).
15th/16th OCTOBER—R.S.G.B. 21.28 Mcs. Telephony Contest. (Note the date for this contest has been changed from that originally advertised.)

appeal is addressed to club leaders or secretaries to send news to (a) me! (Selfish); (b) Newsletter Editor Jim Webster at Birrong High and/or Rex ZYA—it would be good training for the boys. The VKJ Division officials still support Y.R.S. in many ways such as the presentation of prizes to Greg Dunne and Ernie Chalker (first P.G. member to get L.A.O.C.P.). Y.R.S. strongly supports the Division with 30 new members from its ranks in four years.

We are proud of a group here at Canberra Radio Society. Six sat for Elementary and all six obtained Honours with over 90%. One has pressed on hard and we are watching for an A.O.C.P. result. New clubs are developing at Canberra High (re-formed) and Denkin High, while Lynneham, Narrabundah and Canberra Radio Society continue. 73, Ken IKM.

CCC Form 500-A
February 1965

UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION
Washington, D. C. 20554

PERMIT FOR ALIEN AMATEUR RADIO LICENSEE TO OPERATE IN THE UNITED STATES,
His Possessions and the Commonwealth of Puerto Rico

JAMES RUSSELL GODING
51 BAY VIEW DRIVE
SHREWSBURY, MASS. 01546

Effective date of this Permit: JANUARY 12, 1966

This Permit Expires: SEPTEMBER 2, 1966

The above-named alien is hereby authorized to operate the following described amateur radio station in the United States, its possessions, and the Commonwealth of Puerto Rico:

License or Serial Number	Licensing Country	Call Sign	Expiration date
13429	AUSTRALIA	V K 3 Z G G	SEP 2, 1966

Operation under this permit must be in accordance with (1) Current International radio regulations; (2) the terms and conditions of the bilateral agreement for reciprocal amateur radio operation between the alien's country and the Government of the United States; (3) Subparts A through E and G of Part 97 (Amateur Radio Service) of the Rules of the Federal Communications Commission; (4) the terms and conditions of the license issued to the alien by his government; and (5) the special conditions (if any) set forth below.

This permit may be summarily modified, suspended or cancelled by the Commission without adverse notice.
SPECIAL CONDITIONS: OPERATION LIMITED TO PRIVILEGES OF UNITED STATES TECHNICIAN CLASS (SECTION 97.7(D)) AND FURTHER LIMITED TO MAXIMUM TRANSMITTER INPUT POWER OF 150 WATTS AND TELEPHONY ONLY.

FEDERAL COMMUNICATIONS COMMISSION

Ben F. Waples
Secretary

Above is a reproduction of the Amateur Radio License issued to Jim Goding VK3ZGG by the American Authorities.

HIGGINBOTHAM AWARD

W.I.A. PRESIDENT'S REPORT

(Continued from Page 19)

The Publications Committee had great difficulty in reaching a decision as to who should be the recipient of the Higginbotham Award for 1965, and for this reason the announcement was delayed to give the committee extra time to consider the matter.

As the committee could not separate two contributors, it was agreed to share the Award between Mr. J. R. Cox VK6NJ for his work "The History of Communications" and Mr. P. M. Williams VK5NN for his contribution on single band equipment.

The awards have been sent to both gentlemen.

Herbert Hoover, Jr., speaking on the principal problem of I.T.U. conferences dealing with Amateur frequency allocations pin-points the most important aspect when he says "If we fail to meet the problem of protecting our allocations, there will be a very serious erosion of international Amateur Radio as we know it today."

As Federal President of this Institute I am more than happy to know that the I.A.R.U. is making in defence of the Amateur Service in this way, and it behooves this Institute to back the I.A.R.U. effort with everything it has. I believe we can do this in three main ways.

1. To form a permanent liaison committee or working group to maintain close contact with the I.A.R.U. in the Department. The Committee to be composed of members with special experience in this field.

2. To convene within the next two years a conference of Region III Amateur Societies.

3. To finance our representative to attend Region I and Region II I.A.R.U. conferences.

President Hoover concludes "...In my opinion the survival of Amateur Radio, as we know it today, will depend upon our individual effort in the immediate future. There is no time to spare!"

Executive has already received a long report from the N.Z.A.R.T. on the issue of holding a Region III conference. An invitation, which unfortunately we had to turn down at this stage, was received from Mr. John Clarriford, President of the Region I bureau of the I.A.R.U., inviting the W.I.A. to attend their conference to be held during May, 1966, at Opstijl in Yugoslavia.

I leave this matter with the Federal Council for its deep consideration in the W.I.A. is to play its rightful part in Region III.

In closing I record my grateful thanks to members of Executive, the Federal Council and Divisional Councils for the time they have devoted to conducting the affairs of the Wireless Institute of Australia for and on behalf of the Amateurs of Australia.

G. M. Hull, Federal President, W.I.A.

For Reliable Connections



RESIN CORE SOLDERS

O. T. LEMPRIERE & CO. LIMITED

Head Office: 27-41 Bowden Street, Alexandria, N.S.W.
and at Melbourne • Brisbane • Adelaide • Perth.

OTL/79

DX

Sub Editor: ALAN SHAWSMITH, VK4SS
35 Whynot St., West End, Brisbane, Qld.

Conditions at present appear to be a little slack or maybe it is lack of activity generally. During the winter months things quieten down, too, on the local scene. However, openings are being reported on 28 Mcs.

NOTES AND NEWS

Trucial Oman: MP4UBO Roger QRV 14,190 around 2200z. Call 5-10 up.

Qatar: VS9AF, VS9SI, VS9HRV, VS9PRV all will be active from here soon.

Ceylon: 4571W fan on daily from 0130z. Listen 14,135.

Rockall Is.: One day activity only is expected to take place from this spot in early June. No other information available.

French Somaliland: FL8RA still going strong. 14,045 2100z. QSL W2JX.

Algeria: TX2ND 14,250 1800z. QSL VESEUU. Also on is TX2AH 14,217 and A1 mode. QSL W45STL.

Seychelles: VQ8EF 14,243 1900z and Ted, VQ9TC 14,230 2200z.

Sierra Leone: Peter 8L1HX operates around 14,225 2200z. QSL V84OX.

East Caroline: KC6BW works 14,255 around 1330z.

The above by courtesy of LIDXA.

Gibraltar: ZB2AP is a R.A.F. Club station and active daily using a.m. 14,210 1730z onwards.

Small Rep.: 801AU Smitty is active again. He hopes to operate soon as JY1AU and Y12AU. More information if it comes to hand.

Falkland Is.: VP8HD and VP8HJ both working 14 c.w. QSLs VP8HD-G3PEK, VP8HJ-W2CTN.

2a-Land: DL1FT will net make this trip as planned earlier.

Sao Thome: CR5SP now has s.s.b. rig and can be found on 14,100 Kcs. 2100z.

The above by courtesy of AIRWAVES G3JUT. Sudan: ST2BS on 14,234 2100z. QSL U.S. Embassy, Khartoum.

Gough Is.: S.s.b. equipment is being shipped to ZD9BE. He can also be heard on c.w. 20 mx.

Afghanistan: YAI1AW is heard occasionally around 14,200. Try listening at 1200z.

North Borneo: 9M6AP and one or two others are QRV both s.s.b. and c.w. 20. 9M6AP's QSL goes to G3TXE.

Besrahees: Proposed trip by VQ8HB is now reported off.

Tasmania: PT8EU will attempt to put a signal out from here early June. Says he does not as yet have a permit. Mode s.s.b. mainly 20.

ACTIVITIES

Ken VK3TL reports working these choice ones on 20 mx: CP5AD, F9UC/PC, GC8HT, GD1ENK, GW4NZ, HB0ABS (Liechtenstein), HB1AP, IT4IL, OH0NI, OX3JV, SV1EL, T18RS, VP2AC, ZF1GC, IM4A (Minerva Reef), 5W1AX, TX2MD, 9M6NQ. QSLs received: PS1RT, FL8RA, FL8AA, PS1BC, 9P3USA, VQ8RD, CE8WE, VE8CO Zone 2, XT0TH, 4W2AA, VO8ME, YK1AA, YAI1AW, VR5AB, E18S, 5TTH and lots more.

Dud VK4MY reports conditions as picking up and worked some nice ones on 14 c.w. LA8FF, DM4UBO, OH4OZ, UL7ER, OZ4DX, GI4RY, VETANP, LA1H, UW3EX, 6Y8EK, G3ESF, VS6FO, VS9MP (Maldives Is.), VE1RB, LA8SJ, CR8AH, etc.

Chas VK4UC, who is now chasing WPX logged the following also on 20 c.w.: 6Y8EB (who says 6Y5MJ has already returned to Veland), HR5LB, PJ3CI, IT4IL, OZ4N, OZ4DX, LA1KI, SV1MT, ZC4CI. QSLs from VR5AB, GM4JDR, K88BR, KW8EK, 6Y5ME.

Peter VK4PJ reports the 10 and 15 mx bands as open and lists the following QSOs: 21 Mcs, VETPV, 9Q3YL, G6KN, SM5BLA, G3JML, SM5COF, SM5LZ, HL0KW, HK3AW and many, many JAs and Ws. On 28 Mcs, HP1SC, KH6CJ, and several Ws both east and west coast. On 14 Mcs, FB8U, UG8P, HB0XJ, UA1IC, G3NJB, UR2AR, KL7EDY, BV1USA, BV1USF, GI1UV, CN8AP, SM2ABX, VESBW, OE1MEN, 9Y4VP and more. Mostly between 1030z and 1200z and s.s.b. mode.

QTHs

ZF1GC—C/o Boddon Town, Grand Cayman; GD1ENK—via R.S.G.B.; F9UC—DL8FF; 5W1AX—KS8BT; VP2AC—W44YX; HB0ABS—HB0ABS; VP2CC—Box 275, Hamilton; VP2KD—VE2ACD; VP7PK—Box 558, Hamilton; VP1TV—VE3BRG; MP4BDP—via R.S.G.B.; VP5RB—W4RC; VP2SJ—VE4OX; KA5RC—via W2CTN; SH3J—W8SM.

My thanks to the month's contributors: LIDXA, G3JUT, Fla DX'er, VK3TL, VK4PJ, VK4UC, VK4MY and Chas. Thorpe. Once again let me make a plea for more OCEANIA news items. Always needed.

Good hunting, chaps. 73, R.I. VK4SS.

PRECIS OF THE RULES FOR THE 1966 VENEZUELAN INDEPENDENCE CONTEST

Contest Period: 0000 G.M.T., 2nd July, to 2400 G.M.T. 3rd July.

Contest Operation: Call "CQ Venezuelan Contest" on 3.5 through 28 Mcs. on a.m. or s.s.b. Single Operator—All bands and single operator—Single Band entries will be acceptable.

VK stations are permitted to work YV and other American countries.

Exchange a 5 digit number consisting of RS report plus a 3 digit contact number starting with 001.

Scoring: 1 point per contact with "other American countries," 2 points for contact with YV stations except on 7 Mcs. 1 point per contact with YV stations on 7 Mcs.

A multiplier of 1 for each country (A.R.R.L. list) and for each Call Area in YV (1 to 9) and U.S.A. 10 to 91.

The total score for each band is the number of contact points multiplied by the number of multipliers. The total all bands score will be the sum of the contact points in all bands by the sum of the multipliers of all bands.

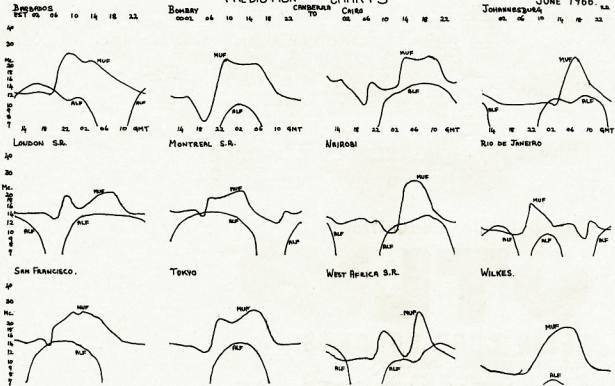
All contestants must compute their own score on a separate summary sheet.

Logs: A separate log must be kept for each band. W.I.A. log format is satisfactory.

Logs postmarked not later than Sept. 15, 1966 to Radio Club Venezolano, Concurso Independencia de Venezuela, P.O. Box 2265, Caracas, Venezuela.

PREDICTION CHARTS

JUNE 1966.



(Prediction Charts by courtesy of Ionospheric Prediction Service)

Mac 2ZMO has nearly finished a new 144 Mc. tx for Ross 2A5J of Stockton (suburb of Newcastle) and has had some fine QSOs, but he still has a few bugs to iron out. Tony 2Z has gone to Sydney for some months for a "refresher course" for his employer. As Tony is our local transistor expert, we hope the system will have been improved. The Sydney stations are heard and worked on 144 Mc. at times mostly by stations in good locations and running high power.—Mac 2ZMO.

VICTORIA

VK3 activity has not been of a very high level, although we have had a short opening to VK1 on Sunday. Les 3ZB has only other 6 mx DX heard has been Interstate Channel 8 and a short opening to VK7. Two meters have been heard by Cyril 3AE to Mt. Gambier, Northern Tasmania and VK3 country districts.

The V.H.F. Field day season has finished and the final scores received are: Oct. winner, George 3ZCG, 2338 pts.; Nov., Cyril 3AEE and Graham 3ZAA, equal 2200 pts.; Dec., George 3ZCG, 2030 pts.; Jan., Jack 3ZPJ, 1762 pts.; Feb., no scores received; March, Peter 3ZPA, 1150 pts.; Overall Winners, George 3ZCG, 6885 pts.; Graham 3ZAA, 2211 pts.; Cyril 3AEE, 2502 pts.; Jack 3ZPJ, 1762 pts.; Les 3ZB, 1422 pts.; Peter 3ZPA, 1150 pts. Also scores were received by Cyril 3AE, VK3.

Other news this month includes that of "Australia", the Amateur Satellite being developed by 3ATM in conjunction with the Adelaide University, the University of Sydney, and the Wireless Institute of Australia. A test package containing a duplicate tx was launched by balloon on 1st May and it successfully passed its tests. The 28 Mc. beacon tx will be tested soon, followed by other units over the next few months.

The 2 m. fox hunts and scrambles are the only set events in VK3 that attract any numbers. Well that is all for this month.—3ZCK.

N.W. Zone: 3ZGU has a neat 2 mx mobile rig almost completed and is waiting on crystals and time to fit it into the car. Noel 3ZGZ is in the midst of painting and hanging curtains, etc., in his new radio room. Unfortunately he was unable to get on the air for this DX season. Noel will be operating on 6 and 2 mx and with a little bit of luck 1 mx well before the new DX season. Most of the 2 m. mobile power tx's will be constructed first, with the idea of using them on net frequencies when the higher power tx's are completed.—3ZGZ.

TOWNSVILLE DISTRICT (VK4)

The main news this month is the long awaited opening of the Westpac Radio Club and J7 signals were heard during February and March, but no stations worked. However, in April we had the first almost daily openings into North Queensland, around 1300-1600 hours E.A.S.T. Other openings occurred at 1700, 2000 and 2300 hrs. E.A.S.T. On April 1st an opening took place over 2 hrs. Signal strengths were high with little or no QSB. Scatter stations were heard at good strength approximately half an hour before most openings. A number of commercial f.m. stations could be heard between 51-52 Mc.

The daily activity in Townsville, Graham 4ZGJ and Bob 4ZRG were on hand at almost every daily opening. A number of fine QSOs resulted, with most of the JA stations being worked. Les 4ZLW in Rockhampton, was heard here on two occasions obtaining his share of the DX.

Southern 6 mx openings are still around with Chas 6ZB and Les 6ZB in the lead. In the news to hand is that Ross 4RO has returned from an enjoyable seven weeks round Australia holiday, while Del 4ZGZ is mixing electronics with pistol shooting and making a fine job of both.—Bob 4ZRG.

WESTERN AUSTRALIA

With apologies for the absence of last month's notes, here is a short summary of the DX season in the West.

The 1966-67 season was, for the southern part of the State at least, very poor. Although early openings in November showed promise, and a good season was expected for the next few months, being short and patchy, even over the usual Christmas-New Year week.

DX-peditions to Esperance and Albany proved largely fruitless, in sharp contrast to previous years. The surprise of the season was performance of Tony 6ZDT at Meekatharra, 490 miles from Perth. In the 12 months of operation, Tony worked into VK2, 3, 4, 5 and possibly VK7—I cannot verify this at the time of writing, but the station was at Meekatharra was VK2, which is normally not very common in this State. Tony reports openings as lengthy and often very good. He also heard JA on 28 Mc., but could not raise any.

Another remarkable feature of Tony's DX season was the appearance of short skips to Perth and 6ZDS in Albany.

On the 2 m. front, no actual contacts were made. However, Tony at Meekatharra reported reception of Channel 7 Sydney for a period of several hours at considerable strength, and high band t.v. openings up to and including Ch. 19, were reported at various times from Kalgoorlie (8ZDC) and Mt. Barker (6ZCD) and a contact in the mobile radio field reports came from the East on the mobile radio frequencies (160 Mc. approx.). These manifestations, and the difficulty some country stations have in getting reception, are experiencing with t.v. and power line noise. It is estimated an upsurge of 3 m. interest in VK6—long an exclusive 6 m. State.

Activity in Perth is still confined in the main to the f.m. channel on 52.65 Mc. Stations such as 6DI and 6DP have even been heard, and Wayne 6ZDD has gained a long sought after call sign. Henry, and that's all.

The 6, 2 and 432 beacons are still running almost continuously. The long awaited lifting of the 2 m. aerial to the dizzy height of 20 feet has improved reception of some stations, often quite considerably. Tom 6TR and Brian 6VU at Quinading are both keen on 2 m. and are using a 50 ft. tower and a most impressive antenna system, putting some excellent signals into Perth.

Finally, apologies for the absence of previous reports for the vagueness of the notes. I am at present far from the north of Perth, and with a cyclone up here and a mail strike in Perth, I have been unable to get on the air. See you on 2 one of these years.—6ZCF.

Publications Committee Reports That . . .

All mail received up to the first mail of the 31st May was considered at the May meeting.

Correspondence was received from VKs 6EP, 2AND, 2QL, 2ZTM, VK6 Division, C. E. Brown, Thomas Roberts, Harry Major, and technical articles from VKs 6VX and 2ZRY.

VK3QL was the only one to respond to last month's request for comments on the Prediction Charts. His suggestions were received to late for inclusion in June issue, but will be acted upon for the July issue.

In each issue of "Amateur Radio" there is a notice on page one stating that all correspondence should be addressed to—

The Editor,

"Amateur Radio,"

P.O. Box 36,

East Melbourne, C2, Vic.

Inconvenience and delay are often caused by matter being addressed to the private address of the Secretary of the Publications Committee. Correct addressing will save time and trouble all round.

The Committee also discussed possible publication dates for the 1966-67 issue of the Call Book, and the Secretary of the Committee that all Divisions under-estimated their requirements of the last issue, and as we print more than enough for the next issue, no copies are available. As soon as publication date is decided all Divisions will be advised and we stress the importance of them advising us of their requirements, before we go to print.

Some contributors of notes are not submitting their material in the correct format. All contributions should be typed on one side of issues of "A.R." and follow the instructions that have been published.

COPY DATE

As from next month copy date for all material for publication will be the 5th of the month except for January when the copy date will be 1st December. Remember, copy for August issue is 5th July.

Phone 34-6539, write or call

WILLIAM J. WILLIS & Co. Pty. Ltd.

428 Elizabeth St., Melbourne

for GEOSCO

Equipment and Components

Sub-Editor: CYRIL MAUDE, VK3ZCK
2 Clarendon St., Avondale Heights, W.2, Vic.

First of all, many thanks to Len 3ZGP for the excellent job he has done over the past 12 months or so in editing this section so that it is in a readable form. Well, I hope that I am able to continue Len's work and keep up the standard.

The news over the past month has been varied with reports that VK4s are working JA's on 6, and JA's hearing VK3s on 6.2 No 2 metre activity in VK6, but plenty of 6 mx activity. We'll everybody is allowed to choose his bands so I will leave the general reporting to the various correspondents.

There is only one thing left, will all correspondents please try to get their notes to me by the 1st of the month prior to publication. 73, Cyril 3ZCK.

NEW SOUTH WALES

V.H.f.-wise, things have been reasonably quiet during the last month. There appears to be little activity on the 28 Mc. band at the moment, but 2 metres is fairly active both on the a.m. end of the band and on the 146 f.m. net. Quite a few new call signs are appearing on the band and even 432 Mc. seems to be attracting some attention.

The new committee has been settling in and working with two of their personnel attending the last morse exam (21W and 2EX) it is to be hoped, therefore, that our committee should shortly have two full complement.

The newsletter has been suspended unfortunately, due to the falling subscriptions making it uneconomic to continue production. It is regretted that although the usual reason, but as the publication was gratis, costs were beginning to get out of hand.

Kas 2ZM of Radio Club is holding a convention over the Queen's Birthday weekend, we will probably be co-ordinating with this group, in lieu of holding a separate "Mountain Top" week-end. There will possibly be a message handling contact held over this week-end during the evenings. Further details will be relayed through the usual channels. The May meeting will be a lecture by Les Jenkins VK2ZBJ on the practical applications of microwave transmitters. This sums up the current activities of the group.

I would, however, on behalf of the group, congratulate the Melbourne University group on their "Australia" satellite project. We wish them the best of luck with it. Till next month. 73, Stephen 2ZSK.

HUNTER BRANCH (VK2)

32 Mc.: This band has been dull over the last month. The locals have kept the net going each Saturday and Sunday and holidays at 10 a.m. One break-through was heard by ZZUB on April 17 at 9.45 a.m. or thereabouts, a couple of VK3 stations were heard on the back of his beam about strength 5's. Noise made it hard to identify call signs, although it is possible it could have been a VK3 mobile north of Newcastle.

Dave 2ZFR has a 6 mx converter going and a tx with 6140 final just about finished. Colin 2ZCC and I have a few weeks off. Gordon 2ZG has a tx. Others with converters for this band include Ian 2ZIO, Allan 2ZAX, ex-6ZDM, and Les 2ZB. The band is quiet and hopes to be active in the near future.

144 Mc.: This band is fairly active on most nights. Monday nights are taken by "Admiral". Gordon 2ZSG relays the Hunter Branch broadcast on the 144 Mc. band from 80 mx, the following stations are usually heard: VKs 2ZB, 2ZC, 2ZD, 2ZE, 2ZF, 2ZG, 2ZH, 2ZI, 2ZJ, 2ZK, 2ZL, 2ZM, 2ZN, 2ZO, 2ZP, 2ZQ, 2ZR, 2ZS, 2ZT, 2ZU, 2ZV, 2ZW, 2ZX, 2ZY, 2ZZ, 2ZAA, 2ZAB, 2ZAC, 2ZAD, 2ZAE, 2ZAF, 2ZAG, 2ZAH, 2ZAI, 2ZAJ, 2ZAK, 2ZAL, 2ZAM, 2ZAN, 2ZAO, 2ZAP, 2ZAQ, 2ZAR, 2ZAS, 2ZAT, 2ZAU, 2ZAV, 2ZAW, 2ZAX, 2ZAY, 2ZAZ, 2ZBA, 2ZBB, 2ZBC, 2ZBD, 2ZBE, 2ZBF, 2ZBG, 2ZBH, 2ZBI, 2ZBJ, 2ZBK, 2ZBL, 2ZBM, 2ZBN, 2ZBO, 2ZBP, 2ZBQ, 2ZBR, 2ZBS, 2ZBT, 2ZBU, 2ZBV, 2ZBW, 2ZBX, 2ZBY, 2ZBZ, 2ZCA, 2ZCB, 2ZCC, 2ZCD, 2ZCE, 2ZCF, 2ZCG, 2ZCH, 2ZCI, 2ZCJ, 2ZCK, 2ZCL, 2ZCM, 2ZCN, 2ZCO, 2ZCP, 2ZCQ, 2ZCR, 2ZCS, 2ZCT, 2ZCU, 2ZCV, 2ZCW, 2ZCX, 2ZCY, 2ZCZ, 2ZDA, 2ZDB, 2ZDC, 2ZDD, 2ZDE, 2ZDF, 2ZDG, 2ZDH, 2ZDI, 2ZDJ, 2ZDK, 2ZDL, 2ZDM, 2ZDN, 2ZDO, 2ZDP, 2ZDQ, 2ZDR, 2ZDS, 2ZDT, 2ZDU, 2ZDV, 2ZDW, 2ZDX, 2ZDY, 2ZDZ, 2ZEA, 2ZEB, 2ZEC, 2ZED, 2ZEE, 2ZEF, 2ZEG, 2ZEH, 2ZEI, 2ZEJ, 2ZEK, 2ZEL, 2ZEM, 2ZEN, 2ZEO, 2ZEP, 2ZEQ, 2ZER, 2ZES, 2ZET, 2ZEU, 2ZEV, 2ZEW, 2ZEX, 2ZFY, 2ZGZ, 2ZHA, 2ZHB, 2ZHC, 2ZHD, 2ZHE, 2ZHF, 2ZHG, 2ZHH, 2ZHI, 2ZHJ, 2ZHK, 2ZHL, 2ZHM, 2ZHN, 2ZHO, 2ZHP, 2ZHQ, 2ZHR, 2ZHS, 2ZHT, 2ZHU, 2ZHV, 2ZHW, 2ZHX, 2ZHY, 2ZHZ, 2ZIA, 2ZIB, 2ZIC, 2ZID, 2ZIE, 2ZIF, 2ZIG, 2ZIH, 2ZII, 2ZIJ, 2ZIK, 2ZIL, 2ZIM, 2ZIN, 2ZIO, 2ZIP, 2ZIQ, 2ZIR, 2ZIS, 2ZIT, 2ZIU, 2ZIV, 2ZIW, 2ZIX, 2ZIY, 2ZIZ, 2ZJA, 2ZJB, 2ZJC, 2ZJD, 2ZJE, 2ZJF, 2ZJG, 2ZJH, 2ZJI, 2ZJJ, 2ZJK, 2ZJL, 2ZJM, 2ZJN, 2ZJO, 2ZJP, 2ZJQ, 2ZJR, 2ZJS, 2ZJT, 2ZJU, 2ZJV, 2ZJW, 2ZJX, 2ZJY, 2ZJZ, 2ZKA, 2ZKB, 2ZKC, 2ZKD, 2ZKE, 2ZKF, 2ZKG, 2ZKH, 2ZKI, 2ZKJ, 2ZKL, 2ZKM, 2ZKN, 2ZKO, 2ZKP, 2ZKQ, 2ZKR, 2ZKS, 2ZKT, 2ZKU, 2ZKV, 2ZKW, 2ZKX, 2ZKY, 2KZ, 2ZLA, 2ZLB, 2ZLC, 2ZLD, 2ZLE, 2ZLF, 2ZLG, 2ZLH, 2ZLI, 2ZLJ, 2ZLK, 2ZLL, 2ZLM, 2ZLN, 2ZLO, 2ZLP, 2ZLQ, 2ZLR, 2ZLS, 2ZLT, 2ZLU, 2ZLV, 2ZLW, 2ZLX, 2ZLY, 2ZLZ, 2ZMA, 2ZMB, 2ZMC, 2ZMD, 2ZME, 2ZMF, 2ZMG, 2ZMH, 2ZMI, 2ZMJ, 2ZMK, 2ZML, 2ZMN, 2ZMO, 2ZMP, 2ZMQ, 2ZMR, 2ZMS, 2ZMT, 2ZMU, 2ZMV, 2ZMW, 2ZMX, 2ZMY, 2MZ, 2ZNA, 2ZNB, 2ZNC, 2ZND, 2ZNE, 2ZNF, 2ZNG, 2ZNH, 2ZNI, 2ZNJ, 2ZNK, 2ZNL, 2ZNM, 2ZNN, 2ZNO, 2ZNP, 2ZNQ, 2ZNR, 2ZNS, 2ZNT, 2ZNU, 2ZNV, 2ZNW, 2ZNX, 2ZNY, 2ZNZ, 2ZOA, 2ZOB, 2ZOC, 2ZOD, 2ZOE, 2ZOF, 2ZOG, 2ZOH, 2ZOI, 2ZOJ, 2ZOK, 2ZOL, 2ZOM, 2ZON, 2ZOO, 2ZOP, 2ZOQ, 2ZOR, 2ZOS, 2ZOT, 2ZOU, 2ZOV, 2ZOW, 2ZOX, 2ZOY, 2ZUZ, 2ZVA, 2ZVB, 2ZVC, 2ZVD, 2ZVE, 2ZVF, 2ZVG, 2ZVH, 2ZVI, 2ZVJ, 2ZVK, 2ZVL, 2ZVM, 2ZVN, 2ZVO, 2ZVP, 2ZVQ, 2ZVR, 2ZVS, 2ZVT, 2ZVU, 2ZVV, 2ZVW, 2ZVX, 2ZVY, 2ZVZ, 2ZWA, 2ZWB, 2ZWC, 2ZWD, 2ZWE, 2ZWF, 2ZWG, 2ZWH, 2ZWI, 2ZWJ, 2ZWK, 2ZWL, 2ZWM, 2ZWN, 2ZWO, 2ZWP, 2ZWQ, 2ZWR, 2ZWS, 2ZWT, 2ZWU, 2ZWV, 2ZWV, 2ZWX, 2ZWY, 2ZWZ, 2ZXA, 2ZXB, 2ZXC, 2ZXD, 2ZXE, 2ZXF, 2ZYG, 2ZYH, 2ZYI, 2ZYM, 2ZYN, 2ZYO, 2ZYP, 2ZYQ, 2ZYR, 2ZYS, 2ZYT, 2ZYU, 2ZYV, 2ZYW, 2ZYZ, 2ZZA, 2ZZB, 2ZZC, 2ZZD, 2ZZE, 2ZZF, 2ZZG, 2ZZH, 2ZZI, 2ZZJ, 2ZZK, 2ZZL, 2ZZM, 2ZZN, 2ZZO, 2ZZP, 2ZZQ, 2ZZR, 2ZZS, 2ZZT, 2ZZU, 2ZZV, 2ZZW, 2ZZX, 2ZZY, 2ZZZ, 2ZAA, 2ZAB, 2ZAC, 2ZAD, 2ZAE, 2ZAF, 2ZAG, 2ZAH, 2ZAI, 2ZAJ, 2ZAK, 2ZAL, 2ZAM, 2ZAN, 2ZAO, 2ZAP, 2ZAQ, 2ZAR, 2ZAS, 2ZAT, 2ZAU, 2ZAV, 2ZAW, 2ZAX, 2ZAY, 2ZAZ, 2ZBA, 2ZBB, 2ZBC, 2ZBD, 2ZBE, 2ZBF, 2ZBG, 2ZBH, 2ZBI, 2ZBJ, 2ZBK, 2ZBL, 2ZBM, 2ZBN, 2ZBO, 2ZBP, 2ZBQ, 2ZBR, 2ZBS, 2ZBT, 2ZBU, 2ZBV, 2ZBW, 2ZBX, 2ZBY, 2ZBZ, 2ZCA, 2ZCB, 2ZCC, 2ZCD, 2ZCE, 2ZCF, 2ZCG, 2ZCH, 2ZCI, 2ZCJ, 2ZCK, 2ZCL, 2ZCM, 2ZCN, 2ZCO, 2ZCP, 2ZCQ, 2ZCR, 2ZCS, 2ZCT, 2ZCU, 2ZCV, 2ZCW, 2ZCX, 2ZCY, 2ZCZ, 2ZDA, 2ZDB, 2ZDC, 2ZDD, 2ZDE, 2ZDF, 2ZDG, 2ZDH, 2ZDI, 2ZDJ, 2ZDK, 2ZDL, 2ZDM, 2ZDN, 2ZDO, 2ZDP, 2ZDQ, 2ZDR, 2ZDS, 2ZDT, 2ZDU, 2ZDV, 2ZDW, 2ZDX, 2ZDY, 2ZDZ, 2ZEA, 2ZEB, 2ZEC, 2ZED, 2ZEE, 2ZEF, 2ZEG, 2ZEH, 2ZEI, 2ZEJ, 2ZEK, 2ZEL, 2ZEM, 2ZEN, 2ZEO, 2ZEP, 2ZEQ, 2ZER, 2ZES, 2ZET, 2ZEU, 2ZEV, 2ZEW, 2ZEX, 2ZFY, 2ZGZ, 2ZHA, 2ZHB, 2ZHC, 2ZHD, 2ZHE, 2ZHF, 2ZHG, 2ZHH, 2ZHI, 2ZHJ, 2ZHK, 2ZHL, 2ZHM, 2ZHN, 2ZHO, 2ZHP, 2ZHQ, 2ZHR, 2ZHS, 2ZHT, 2ZHU, 2ZHV, 2ZHW, 2ZHX, 2ZHY, 2ZHZ, 2ZIA, 2ZIB, 2ZIC, 2ZID, 2ZIE, 2ZIF, 2ZIG, 2ZIH, 2ZII, 2ZIJ, 2ZIK, 2ZIL, 2ZIM, 2ZIN, 2ZIO, 2ZIP, 2ZIQ, 2ZIR, 2ZIS, 2ZIT, 2ZIU, 2ZIV, 2ZIW, 2ZIX, 2ZIY, 2ZIZ, 2ZJA, 2ZJB, 2ZJC, 2ZJD, 2ZJE, 2ZJF, 2ZJG, 2ZJH, 2ZJI, 2ZJJ, 2ZJK, 2ZJL, 2ZJM, 2ZJN, 2ZJO, 2ZJP, 2ZJQ, 2ZJR, 2ZJS, 2ZJT, 2ZJU, 2ZJV, 2ZJW, 2ZJX, 2ZJY, 2ZJZ, 2ZKA, 2ZKB, 2ZKC, 2ZKD, 2ZKE, 2ZKF, 2ZKG, 2ZKH, 2ZKI, 2ZKJ, 2ZKL, 2ZKM, 2ZKN, 2ZKO, 2ZKP, 2ZKQ, 2ZKR, 2ZKS, 2ZKT, 2ZKU, 2ZKV, 2ZKW, 2ZKX, 2ZKY, 2KZ, 2ZLA, 2ZLB, 2ZLC, 2ZLD, 2ZLE, 2ZLF, 2ZLG, 2ZLH, 2ZLI, 2ZLJ, 2ZLK, 2ZLL, 2ZLM, 2ZLN, 2ZLO, 2ZLP, 2ZLQ, 2ZLR, 2ZLS, 2ZLT, 2ZLU, 2ZLV, 2ZLW, 2ZLX, 2ZLY, 2ZLZ, 2ZMA, 2ZMB, 2ZMC, 2ZMD, 2ZME, 2ZMF, 2ZMG, 2ZMH, 2ZMI, 2ZMJ, 2ZMK, 2ZML, 2ZMN, 2ZMO, 2ZMP, 2ZMQ, 2ZMR, 2ZMS, 2ZMT, 2ZMU, 2ZMV, 2ZMW, 2ZMX, 2ZMY, 2MZ, 2ZNA, 2ZNB, 2ZNC, 2ZND, 2ZNE, 2ZNF, 2ZNG, 2ZNH, 2ZNI, 2ZNJ, 2ZNK, 2ZNL, 2ZNM, 2ZNN, 2ZNO, 2ZNP, 2ZNQ, 2ZNR, 2ZNS, 2ZNT, 2ZNU, 2ZNV, 2ZNW, 2ZNX, 2ZNY, 2ZNZ, 2ZOA, 2ZOB, 2ZOC, 2ZOD, 2ZOE, 2ZOF, 2ZOG, 2ZOH, 2ZOI, 2ZOJ, 2ZOK, 2ZOL, 2ZOM, 2ZON, 2ZOO, 2ZOP, 2ZOQ, 2ZOR, 2ZOS, 2ZOT, 2ZOU, 2ZOV, 2ZOW, 2ZOX, 2ZOY, 2ZUZ, 2ZVA, 2ZVB, 2ZVC, 2ZVD, 2ZVE, 2ZVF, 2ZVG, 2ZVH, 2ZVI, 2ZVJ, 2ZVK, 2ZVL, 2ZVM, 2ZVN, 2ZVO, 2ZVP, 2ZVQ, 2ZVR, 2ZVS, 2ZVT, 2ZVU, 2ZVV, 2ZVW, 2ZVX, 2ZVY, 2ZVZ, 2ZWA, 2ZWB, 2ZWC, 2ZWD, 2ZWE, 2ZWF, 2ZWG, 2ZWH, 2ZWI, 2ZWJ, 2ZWK, 2ZWL, 2ZWM, 2ZWN, 2ZWO, 2ZWP, 2ZWQ, 2ZWR, 2ZWS, 2ZWT, 2ZWU, 2ZWV, 2ZWV, 2ZWX, 2ZWY, 2ZWZ, 2ZXA, 2ZXB, 2ZXC, 2ZXD, 2ZXE, 2ZXF, 2ZYG, 2ZYH, 2ZYI, 2ZYM, 2ZYN, 2ZYO, 2ZYP, 2ZYQ, 2ZYR, 2ZYS, 2ZYT, 2ZYU, 2ZYV, 2ZYW, 2ZYZ, 2ZZA, 2ZZB, 2ZZC, 2ZZD, 2ZZE, 2ZZF, 2ZZG, 2ZZH, 2ZZI, 2ZZJ, 2ZZK, 2ZZL, 2ZZM, 2ZZN, 2ZZO, 2ZZP, 2ZZQ, 2ZZR, 2ZZS, 2ZZT, 2ZZU, 2ZZV, 2ZZW, 2ZZX, 2ZZY, 2ZZZ, 2ZAA, 2ZAB, 2ZAC, 2ZAD, 2ZAE, 2ZAF, 2ZAG, 2ZAH, 2ZAI, 2ZAJ, 2ZAK, 2ZAL, 2ZAM, 2ZAN, 2ZAO, 2ZAP, 2ZAQ, 2ZAR, 2ZAS, 2ZAT, 2ZAU, 2ZAV, 2ZAW, 2ZAX, 2ZAY, 2ZAZ, 2ZBA, 2ZBB, 2ZBC, 2ZBD, 2ZBE, 2ZBF, 2ZBG, 2ZBH, 2ZBI, 2ZBJ, 2ZBK, 2ZBL, 2ZBM, 2ZBN, 2ZBO, 2ZBP, 2ZBQ, 2ZBR, 2ZBS, 2ZBT, 2ZBU, 2ZBV, 2ZBW, 2ZBX, 2ZBY, 2ZBZ, 2ZCA, 2ZCB, 2ZCC, 2ZCD, 2ZCE, 2ZCF, 2ZCG, 2ZCH, 2ZCI, 2ZCJ, 2ZCK, 2ZCL, 2ZCM, 2ZCN, 2ZCO, 2ZCP, 2ZCQ, 2ZCR, 2ZCS, 2ZCT, 2ZCU, 2ZCV, 2ZCW, 2ZCX, 2ZCY, 2ZCZ, 2ZDA, 2ZDB, 2ZDC, 2ZDD, 2ZDE, 2ZDF, 2ZDG, 2ZDH, 2ZDI, 2ZDJ, 2ZDK, 2ZDL, 2ZDM, 2ZDN, 2ZDO, 2ZDP, 2ZDQ, 2ZDR, 2ZDS, 2ZDT, 2ZDU, 2ZDV, 2ZDW, 2ZDX, 2ZDY, 2ZDZ, 2ZEA, 2ZEB, 2ZEC, 2ZED, 2ZEE, 2ZEF, 2ZEG, 2ZEH, 2ZEI, 2ZEJ, 2ZEK, 2ZEL, 2ZEM, 2ZEN, 2ZEO, 2ZEP, 2ZEQ, 2ZER, 2ZES, 2ZET, 2ZEU, 2ZEV, 2ZEW, 2ZEX, 2ZFY, 2ZGZ, 2ZHA, 2ZHB, 2ZHC, 2ZHD, 2ZHE, 2ZHF, 2ZHG, 2ZHH, 2ZHI, 2ZHJ, 2ZHK, 2ZHL, 2ZHM, 2ZHN, 2ZHO, 2ZHP, 2ZHQ, 2ZHR, 2ZHS, 2ZHT, 2ZHU, 2ZHV, 2ZHW, 2ZHX, 2ZHY, 2ZHZ, 2ZIA, 2ZIB, 2ZIC, 2ZID, 2ZIE, 2ZIF, 2ZIG, 2ZIH, 2ZII, 2ZIJ, 2ZIK, 2ZIL, 2ZIM, 2ZIN, 2ZIO, 2ZIP, 2ZIQ, 2ZIR, 2ZIS, 2ZIT, 2ZIU, 2ZIV, 2ZIW, 2ZIX, 2ZIY, 2ZIZ, 2ZJA, 2ZJB, 2ZJC, 2ZJD, 2ZJE, 2ZJF, 2ZJG, 2ZJH, 2ZJI, 2ZJJ, 2ZJK, 2ZJL, 2ZJM, 2ZJN, 2ZJO, 2ZJP, 2ZJQ, 2ZJR, 2ZJS, 2ZJT, 2ZJU, 2ZJV, 2ZJW, 2ZJX, 2ZJY, 2ZJZ, 2ZKA, 2ZKB, 2ZKC, 2ZKD, 2ZKE, 2ZKF, 2ZKG, 2ZKH, 2ZKI, 2ZKJ, 2ZKL, 2ZKM, 2ZKN, 2ZKO, 2ZKP, 2ZKQ, 2ZKR, 2ZKS, 2ZKT, 2ZKU, 2ZKV, 2ZKW, 2ZKX, 2ZKY, 2KZ, 2ZLA, 2ZLB, 2ZLC, 2ZLD, 2ZLE, 2ZLF, 2ZLG, 2ZLH, 2ZLI, 2ZLJ, 2ZLK, 2ZLL, 2ZLM, 2ZLN, 2ZLO, 2ZLP, 2ZLQ, 2ZLR, 2ZLS, 2ZLT, 2ZLU, 2ZLV, 2ZLW, 2ZLX, 2ZLY, 2ZLZ, 2ZMA, 2ZMB, 2ZMC, 2ZMD, 2ZME, 2ZMF, 2ZMG, 2ZMH, 2ZMI, 2ZMJ, 2ZMK, 2ZML, 2ZMN, 2ZMO, 2ZMP, 2ZMQ, 2ZMR, 2ZMS, 2ZMT, 2ZMU, 2ZMV, 2ZMW, 2ZMX, 2ZMY, 2MZ, 2ZNA, 2ZNB, 2ZNC, 2ZND, 2ZNE, 2ZNF, 2ZNG, 2ZNH, 2ZNI, 2ZNJ, 2ZNK, 2ZNL, 2ZNM, 2ZNN, 2ZNO, 2ZNP, 2ZNQ, 2ZNR, 2ZNS, 2ZNT, 2ZNU, 2ZNV, 2ZNW, 2ZNX, 2ZNY, 2ZNZ, 2ZOA, 2ZOB, 2ZOC, 2ZOD, 2ZOE, 2ZOF, 2ZOG, 2ZOH, 2ZOI, 2ZOJ, 2ZOK, 2ZOL, 2ZOM, 2ZON, 2ZOO, 2ZOP, 2ZOQ, 2ZOR, 2ZOS, 2ZOT, 2ZOU, 2ZOV, 2ZOW, 2ZOX, 2ZOY, 2ZUZ, 2ZVA, 2ZVB, 2ZVC, 2ZVD, 2ZVE, 2ZVF, 2ZVG, 2ZVH, 2ZVI, 2ZVJ, 2ZVK, 2ZVL, 2ZVM, 2ZVN, 2ZVO, 2ZVP, 2ZVQ, 2ZVR, 2ZVS, 2ZVT, 2ZVU, 2ZVV, 2ZVW, 2ZVX, 2ZVY, 2ZVZ, 2ZWA, 2ZWB, 2ZWC, 2ZWD, 2ZWE, 2ZWF, 2ZWG, 2ZWH, 2ZWI, 2ZWJ, 2ZWK, 2ZWL, 2ZWM, 2ZWN, 2ZWO, 2ZWP, 2ZWQ, 2ZWR, 2ZWS, 2ZWT, 2ZWU, 2ZWV, 2ZWV, 2ZWX, 2ZWY, 2ZWZ, 2ZXA, 2ZXB, 2ZXC, 2ZXD, 2ZXE, 2ZXF, 2ZYG, 2ZYH, 2ZYI, 2ZYM, 2ZYN, 2ZYO, 2ZYP, 2ZYQ, 2ZYR, 2ZYS, 2ZYT, 2ZYU, 2ZYV, 2ZYW, 2ZYZ, 2ZZA, 2ZZB, 2ZZC, 2ZZD, 2ZZE, 2ZZF, 2ZZG, 2ZZH, 2ZZI, 2ZZJ, 2ZZK, 2ZZL, 2ZZM, 2ZZN, 2ZZO, 2ZZP, 2ZZQ, 2ZZR, 2ZZS, 2ZZT, 2ZZU, 2ZZV, 2ZZW, 2ZZX, 2ZZY, 2ZZZ, 2ZAA, 2ZAB, 2ZAC, 2ZAD, 2ZAE, 2ZAF, 2ZAG, 2ZAH, 2ZAI, 2ZAJ, 2ZAK, 2ZAL, 2ZAM, 2ZAN, 2ZAO, 2ZAP, 2ZAQ, 2ZAR, 2ZAS, 2ZAT, 2ZAU, 2ZAV, 2ZAW, 2ZAX, 2ZAY, 2ZAZ, 2ZBA, 2ZBB, 2ZBC, 2ZBD, 2ZBE, 2ZBF, 2ZBG, 2ZBH, 2ZBI, 2ZBJ, 2ZBK, 2ZBL, 2ZBM, 2ZBN, 2ZBO, 2ZBP, 2ZBQ, 2ZBR, 2ZBS, 2ZBT, 2ZBU, 2ZBV, 2ZBW, 2ZBX, 2ZBY, 2ZBZ, 2ZCA, 2ZCB, 2ZCC, 2ZCD, 2ZCE, 2ZCF, 2ZCG, 2ZCH, 2ZCI, 2ZCJ, 2ZCK, 2ZCL, 2ZCM, 2ZCN, 2ZCO, 2ZCP, 2ZCQ, 2ZCR, 2ZCS, 2ZCT, 2ZCU, 2ZCV, 2ZCW, 2ZCX, 2ZCY, 2ZCZ, 2ZDA, 2ZDB, 2ZDC, 2ZDD, 2ZDE, 2ZDF, 2ZDG, 2ZDH, 2ZDI, 2ZDJ, 2ZDK, 2ZDL, 2ZDM, 2ZDN, 2ZDO, 2ZDP, 2ZDQ, 2ZDR, 2ZDS, 2ZDT, 2ZDU, 2ZDV, 2ZDW, 2ZDX, 2ZDY, 2ZDZ, 2ZEA, 2ZEB, 2ZEC, 2ZED, 2ZEE, 2ZEF, 2ZEG, 2ZEH, 2ZEI, 2ZEJ, 2ZEK, 2ZEL, 2ZEM, 2ZEN, 2ZEO, 2ZEP, 2ZEQ, 2ZER, 2ZES, 2ZET, 2ZEU, 2ZEV, 2ZEW, 2ZEX, 2ZFY, 2ZGZ, 2ZHA, 2ZHB, 2ZHC, 2ZHD, 2ZHE, 2ZHF, 2ZHG, 2ZHH, 2ZHI, 2ZHJ, 2ZHK, 2ZHL, 2ZHM, 2ZHN, 2ZHO, 2ZHP, 2ZHQ, 2ZHR, 2ZHS, 2ZHT, 2ZHU, 2ZHV, 2ZHW, 2ZHX, 2ZHY, 2ZHZ, 2ZIA, 2ZIB, 2ZIC, 2ZID, 2ZIE, 2ZIF, 2ZIG, 2ZIH, 2ZII, 2ZIJ, 2ZIK, 2ZIL, 2ZIM, 2ZIN, 2ZIO, 2ZIP, 2ZIQ, 2ZIR,

Sub-Editor: D. GRANTLEY, W1A-12022
Alexander Ave., Hazelbrook, N.S.W.

I was very disappointed to read the results of the 1965 VK7ZL contest in the April issue, for once again only 12 of our many listeners are listed as having taken part. As we all expected that the club place would go to the c.w. men, who as I said once before have this contest at their mercy, and whilst the contest is "Receiving Open", for the s.w.l.s. this condition will persist. Peter Drew as usual topped the overall score with 11,040 points, which was a fine effort and is probably a record for this event. (Any former figures available, Eric?) Now that winter is coming on, we look to our next VK contest, the P.D. Now is the time to start the big overhaul of your gear, check those faulty tubes, poor antenna connections, alignment, put some carbon-tetrachloride on the noisy controls, and in general, bring the gear up to a standard which will enable you as an individual operator to make this fine contest a success.

DX News. KXSB6 has been heard regularly on 40 metres s.s.b. from 0730z most nights at good strength. BV1USA and OXJMV have been logged on 14.3 s.s.b. at good strength. The latter's QSL manager is SMTCAB. All QSLs for BV1USA heard recently, should be active at present, with QSLs to KJ5GOT. Should you hear 3A2DA this is most likely to be a pirate, and the call should be reported. The VK2YN was recently reported in an English publication as having logged on 10 metres at Farnham in the U.K. on a 10 metre band with a 30-2 wire around the picture rail, whilst in the same magazine VK5VA is reported on 40 metres by a s.w.l. using a 20 metre vertical.

Overseas W.A. This month we greet a well-known listener from Great Britain, Bernard Hughes, whose name is readily recalled as QSL ladder and tape section manager for the I.S.W. in London. Details of his gear are as follows: rx is an Eydstone 840c, with a Codar PR30 preselector for 20 metres dipole and 66 inch long. One of his awards is that Bernard's listening has been his award hunting, and to date he has the Ockenden Venture award. He has also won awards for several countries, United Nations Class 2 for 55 countries, U.N. Class 3 for 40 countries, several country awards, and the I.S.W. award from Radio New York World Wide S.W.L. Club Gold Certificate. Other awards have been applied for. Countries heard to date 125 with 77 confirmed in 29 zones. He has to date heard 289 prefixes with 145 confirmed.

On the tape side of the hobby, Bernard uses the following machines: Truvox RS2, Philips EL3552, Elizabethan TTR, A.I.W.A. TFR3, and Garrard SP25 speed transcription deck. At the moment he has 27 tape contacts in nine countries including one /NM.

Around the Shacks. Firstly over to VK6 and Bryan Prossor who has been using the tapes and tape, and has been listening fairly often, and reports good conditions on 15 metres. On the old standby 20 metres VSEFO, KE2HIA/MH, ZSEBR and LA7RF were a few of the signals heard. One of the boys for Bryan included GJ1JIM, DL7BO, WB1U/KG, YK1AA, OA4QW, EP5AM, SM2SS, LA5YE and HB8MU. If he could hear from Bryan for a few months more of you VK5 boys had better set out across the Nullarbor to look for him, as he plans to set out for Adelaide in June, and whilst on the subject of that fair city, a letter to hand from Alan Raftery indicates that he is still intent on the next I.O.C.P. expedition, but was able to hear quite a number of American s.s.b. and a.m. stations on 7 Mcs., whilst on 7 he heard all continents on s.s.b., plus EA2JE, several W and VZ on a.m. and the VK2, Chas. Abernethy, I had a long and very interesting letter.

Chas. wishes to remind anyone interested in card swapping, that he has names and addresses of many s.w.l.s. throughout the world who with a name and a s.s.b. to his address 30 Urunga Road, Miranda, N.S.W., will bring you further information. Band conditions here in Sydney are still extremely good, but at L202 I have continued to find much of interest on all bands except top and 10 metres. Whilst nothing new has been located, Peter has made the search a pleasure. Let's

hope it continues. It is with much pleasure that we welcome back to the fold our VK7 supporter Greg Johnston who has just returned from a short spell at Macquarie Island. Greg is now QSL manager for Co VKOM1, a task which will keep him fully occupied. Up here is VK3 Mac Hilliard who reports good signals from W land on 10 metres. This is the best report I have had to date on ten, and is quite significant, as his QTH over in Kingsford would not be the best for DX. Mac has now moved up a little higher in the DX ladder with 245 heard. I could write a full column on the activities of Ernie Luft, who seems to be intent on catching the leaders. Prefixes heard at his QTH in Elizabeth Vale, S.A., were: FQKZ, FVJ, EA, Z, JAB, and the KG6, UA2, TZ, HK2, ZSA, FQZ, DL, OK1 and DUT. New confirmations were YN1CML and KR5MB.

I have no s.w.l. reports from VK4 this month, however, Chas VK4UC reports excellent conditions on all bands, particularly on the DX front in the late afternoon. Chas has been most helpful in supplying QTHs and information for this page, and I am sure we all appreciate such assistance from one of our top DX men. He uses a Gelsco v.f.o./buffer/6DQ3 into an inverted vee, and gets out exceptionally well with his 30 watts Ix in an ART Ray Kearney L857 logged the following prefixes on his completely rewired ART: LA, ELA, OEX, OX3, CN8, CTI, RA8, KP4, VP5, YN1, HI, UH1, UE1, UB1, MP4, XW5, Y5, F06 and ZL5AA. Ray, as well as overhauling the ART, has erected a long wire antenna, 130 ft. long and 35 ft. high. Warwick Smith, L3211 has been working on his Rx at the late, thus he has not done a lot of listening. However, he did manage FB8Y, HB0ABS, CTI, VP2, HR1, TQ9, GY3 VYI and many others. A new card received was WB61PI/KJ5. Bob Halligan L3229 received cards from WB1U/KG, VSEFO, EP1BQ, OK1ADP, UA4KED VKOM1 and 9M2DK, with a new country heard, EL30. Bob has been concentrating on 5 metres and has a new GP up 30 feet.

Down to VK7 and Bob Mutton who lost his dipoles, however, he reports plenty of W's on 7 Mcs. at 0700z. Inward cards include HB8GN, SV1AE, SM2BK and VSEFO. A letter from Ernie Luft on 10 metres, resident in the United Kingdom, all on 20 metres (a.m. or s.s.b.), but not C.W. The 12 contacts must include G and G.V. and three of the contacts must have been working a member station of the Elizabeth Radio Club. All applications for QSLs should be sent to Elizabeth Road, Elizabeth Vale. Ernie has just received cards from VSEFS, CTILX, FGV, CP8F and OXV. Firstly to Peter Drew over in VK5. On 10 metres he logged over SV1LP, KR6BF and VK0RD and a few JAs, 15 metres still loaded with JAs plus 7Q7FS, SV1DA, DUTY, MP4TBO, SM5SQ, ZS8HT, ZE1CB, ZE2JA, 9N1MM, ZS3JU, ZS8OM, 9V1NP and W6KXZ, most on s.s.b. On the other

bands the conditions in W.A. have been similar to those of the eastern ones. Peter has given me a long list of calls heard on the other bands, but lack of space does not permit me to print them. Congratulations to Peter on your fine top score in the last VK7ZL. I will be in Melbourne for most of June, so hope to meet many of the VK3 group then. Tapes to hand this month include Bryan Prossor of VK6, Bernard Hughes of England with numerous on conditions in that country, and a very interesting spool from VK3 I.S.W.L. member Doug Head of South Yarra.

Queries and Answers. Bob Mutton, in answer to your query re the operation of VK9TL, Ken has written to say that the only legal operation for this circuit is on 3.1/85 to 2.9/163, and he is the only holder of the call. Therefore we can assume that there is a pirate about. Wanted by L4154, John Davidson of Lister Street, Sunnybank, Brisbane, the circuit of an STC A679H. The circuit or handbook of the Grundig type 4080WE is required, and any information on this should be sent to Chas. Abernethy. Bryan Prossor of VK6 is in trouble with his Murphy B40, and wonders if any of our chaps can give him a list of substitute tubes for it. The elusive RA 3160 whom Chas. has been trying to run to earth, has turned out to be L2054. How about letting us in on the mystery old man? Bob Halligan, QTH of VSEOC is Royal Air Force, Masirah Amateur Radio Club, B.F.P.O. 69, Masirah Is. Or via R.S.G.B. bureau.

DX LADDER

A close perusal of this list will note some interesting changes in the lower positions, and a few deletions.

	Countries Cont.	Zones Hrd.	Cont.	States
E. Trebilcock	292	296	40	50
P. Drew	188	295	38	40
D. Grantley	133	295	38	35
W. Smith	126	297	34	7
A. Westcott	106	159	34	11
R. Kearney	104	179	37	8
G. Earl	101	167	33	10
M. Hilliard	96	245	33	14
E. Luft	70	121	27	6
C. Abernethy	66	102	27	14
A. Raftery	62	186	26	11
R. Halligan	61	154	27	3
B. Prossor	60	180	17	8
R. Mutton	50	100	27	10
B. Mackintosh	41	102	20	5

VK3 NEWS

The mail today brought the first copy of the new publication from the group, "Zero-Best". A lot of time and care has gone into this effort, and it deserved the support of all s.w.l.s. For further information write: M. Krochmal, 3/20 Hillside Avenue, Caulfield, Victoria.

That finds it up for this month chaps, thanks for your interest, and look forward to hearing from you all again in a few weeks. 73, de Don L2022.

CENTRALIN, ALUMINUM ALLOY TUBING

IDEAL FOR BEAM AERIALS AND T.V.

★ LIGHT ★ STRONG ★ NON-CORROSIVE

STOCKS NOW AVAILABLE FOR IMMEDIATE DELIVERY

ALL DIAMETERS—1" TO 3"

Price List on Request

STOCKISTS OF SHEETS—ALL SIZES AND GAUGES

GUNNERSSEN ALLEN METALS PTY. LTD.

SALMON STREET,
PORT MELBOURNE, VIC.

Phone: 64-3351 (10 lines)
Telegrams: "Metals," Melb.



HANSON ROAD,
WINGFIELD, S.A.

Phone: 45-6021 (4 lines)
Telegrams: "Metals," Adel.



FEDERAL AND DIVISIONAL MONTHLY NEWS REPORTS

(SEND CORRESPONDENCE DIRECT TO DIVISIONAL REPORTER NAMED AT PERU.)

FEDERAL QSL BUREAU

The following change in the A.R.R.L. QSL Bureau set-up is effective immediately:-
W2-Nor. Jersey DX Association,
P.O. Box 505,
Ridgewood, N.J. 07451.

PTYACQ—Plinio, was scheduled to be active on 14 and 21 Mx from April 6 to April 12. QSLs should go to Brazilian DX Club, Box 842, RECIFE, Brazil. Envelope and 3 I.R.C. requested.

Results of the 1965 OZ-CCA Contest do not list any VK or ZL stations. The 1966 contest (15th) was staged April 30 and May 1 but information was received too late for publication in April A.R.

Gond to hear from Ted VK9TB, ex-VK9QM, Ted is active on 7 Mc. c.w. and anxious to give any new stations their VK3.

The Independence of Colombia DX Contest scheduled from zero G.M.T., Saturday, July 10, to 2359Z, Sunday, July 17. Full details and log forms can be had from this Bureau.

Bruno Bossert, HB9QD, who spent 1964 in Australia and desires to return on a permanent basis, took unto himself a wife, the event taking place near Lucerne on May 18. Congratulations Bruno and hope we will meet you both.

—Ray E. Jones, VK3RJ, Manager.

NORTH SOUTH WALES

Friday evening, 22nd April, saw the re-union of the annual general meeting of the VK2 Division of the Wireless Institute, Crows Nest. The retiring President (Ivan Agor VK2AIM) took the chair and there was attendance of about 50, including two visitors, Morrie Parsons (ZLIMC) a member of the N.Z.A.R.T. Council and associate member of the W.I.A. and Fred Kunkin (VK2PF), of Lismore, immediate past president of the Far Northern Radio Club.

The Auditor (Mr. Ingherwood) presented the report of the annual general meeting. This showed that a surplus of £834 had been made on the year's operations, a substantial part of this amount being held in reserve. The balance of the overdraft at the bank was higher than the amount have been, but it is expected that the recent increase in subscriptions will overcome this.

After the auditor had cleared up a number of points raised by members of the audience, he was accorded a vote of thanks for his assistance to Council and the Division.

A further vote of thanks was moved to all who had helped in any way with the work of the Division during the year.

Before closing the annual meeting, the chairman referred to the friendship that had been accorded him by members throughout the State during his term of office, and particularly mentioned the debt that we all owe to that would have been a disaster. The success depended on to carry out their duties efficiently, year after year. He then offered his support and best wishes for a successful term to the incoming President, Tom O'Donnell VK9OD, who took the chair and opened the monthly general meeting.

The security of the evening was entitled "Control Circuits and Relays" and was delivered by Bob Barringer VK2ZIB. Bob proved himself to be a very able and interesting lecturer, and his use of the aid of some of his relays in a simple circuit. This enabled the beam to be rotated either way by merely turning a switch. We are sure the publication

SILENT KEY

It is with deep regret that we record the passing of:

VK2KAN—Frank Cook.

VK4EL—Eric Lake.

Ex-VK4RT—J. (Roy) Thorley.

VK6AB—Alan Buckle.

of details of this gadget would be a popular move.

The usual vote of thanks to the lecturer was dealt with by Hans Ruckert VK2AOU.

The main business before the meeting was the presentation of a report by the Federal Council, Pledge Hill VK2AB in the 30th Federal Convention of the W.I.A. held in Brisbane over Easter week-end. Keith Howard, official VK2 observer, was also present at the meeting.

A considerable part of the report dealt with discussion on the proposed new Federal Constitution, with emphasis on the most contentious section dealing with the voting powers of Divisions.

This matter is one that is bound to create much interest and a great deal of discussion, both within the Constitution Committee and among members, before a decision is finally reached.

Apart from the Constitution, the Convention dealt with matters of policy, administration, I.T.U., F.M.C. and regulations and Contest items, and so many interesting details came out of the discussion that we could not possibly cover them in these notes. The report is being published in full in the VK2 Bulletin and we recommend that all members read it thoroughly.

Fred VK2PF complimented Pierce on the comprehensive nature of the report and a vote of thanks was carried in the usual manner.

Divisional Council has suffered its first casualty with the resignation of Morrie Marsden VK2ZY, because of other commitments. Morrie had undertaken the duties of a Minister and was a keen Councilor, and his resignation was received with much regret.

Membership of the VK2 Division continues on the up and up and a number of new members into membership of the W.I.A. at the April meeting.

Outlets for the May "A.R." (if they managed to get through in spite of the mail strike) reported that W.I.A. history had been made with what is thought to be the first lady member of the Division, Mrs. M. G. Hebe Grouse VK2AB won her right to sit at the Council table in the recent ballot. During the Hebe Grouse broadcast, I'm sure all who heard it will agree that she gave us a very well presented and newsworthy broadcast. Congratulations, Hebe!

A recent addition to the Club population is the Nepean District Radio Club, with former Divisional President, Max VK2MP, in the chair. Showing commendable activity, the members intend holding a Field Day on 12th June at the Penrith Civil Defence H.Q., which is located in the Murrumbidgee area. Anyone living in this area with an interest in radio would be welcomed as members.

The W.I.C.E.N. members are still meeting regularly. At the present time they are conducting a series of "clinics" at W.I.C. on certain Saturday afternoons, when those with mobile outfits make brief trips to the club and have their tuners up and put on frequency with the aid of equipment that has been loaned for the purpose.

The H.P.E. and T.V. Group have continued with their usual meeting and fox-hunts during the month. Of interest to those interested in V.H.F. is the news that Alan VK2ABA was recently told by a JA that VK3 was being heard in Japan on 6 metres.

Two well-known conventions were held as usual at Ennals, at the end of March and the other at Urunga. Both functions were very successful, there being 63 registrations and members attending on the 10th at Canberra, and 27 registrations plus XYLs and harmonics at Urunga. Divisional Council was represented at Canberra by the President, Tom O'Donnell VK9OD, but Council's representative for Urunga, Charlie Wilkins VK2ALB, was held up in Brisbane by family illness and unfortunately was not able to attend.

Ken Mattel VK1KM has informed us that he will be forwarding notes of the Canberra "do" direct to "A.R." so we will not duplicate them here. We are indebted to Bill Alworth VK2ABA—Grafton Bill to his friends—for the following information:

The Urunga Convention was held over the Easter week-end. There were 27 registrations, plus XYLs. The weather was perfect and all who attended enjoyed a very pleasant and entertaining week-end.

The Saturday evening social was held at the Urunga School of Arts, when supper was provided by the local Press Association. The social on the Sunday night was staged at the Bellingen Bowling Club. Entertainment was provided by Mr. Noel Hansen VK2AH on his Hammond organ and Mr. Jack Greer, who sang several excellent numbers. Prizes for the winners of the competitions were presented on the Sunday night. The Convention finished with goodbyes on the Monday morning.

A telegram was received from Cref and John Retaille VK2KO from Mt. Cook, New Zealand, sending their best wishes for the Convention.

Results:

1st. Mc. Hunt; 1st. Brian Starck (Bellingen) VK2ZCQ; 2nd. Allan Lundy (Inverell) VK2ASI; 3rd. Jim Cummings (Sydney) VK2ZPM. 1st. Y4 Mx (Saturday) 1st. Allan Lundy (Inverell) VK2ASI; 2nd. Bill Sinclair (Tamworth) VK2ZVB; 3rd. Jim Cummings (Sydney) VK2PM. 1st. Mc. Hunt (Sunday); 1st. Bill Sinclair (VK2ZVB). Bill was the only one to locate the hidden transmitter, which was hidden in a forest. Several of the other starters found the way into the location, which was a challenge, as several roads led in the general direction of the transmitter.

Urunga Scramble; 1st. Dave Davies (Newcastle) VK2BZ; 2nd. Reg Stockman (Inverell) VK2ATS; 3rd. Harry Crisp (Urunga) VK2AIM.

HUNTER BRANCH

Some members will have noticed the absence of notes for the Branch during the past two months. The causes of such omission were technical difficulties in the Hunter Branch. Nevertheless, activity in the Branch has remained at a steady level and meetings have been held as usual. The April meeting was cancelled because of a severe cold in Sydney, but, at the last moment he was unable to attend and a screening of two interesting films, "The Battle of Britain" and "The Battle of Britain". These films, "Heart of a City" and "Pipeline to the Clouds", gave some graphic views of the present day situation. The activities are upon the public water supply and underlined the need for care in the use of this precious commodity.

On the Tuesday after the committee meeting on the Tuesday after the monthly meeting in order to arrange the programme for the following meeting. All interested are asked to attend to assist with this important aspect of Branch activity. The gathering takes place at Bill Hall's residence in Bellingen Street, Cook's Hill, and the rather informal proceedings commence at 8 p.m. This applies to the Tuesday following the first Friday of the month. As a result of decisions taken, a worthwhile programme of lectures, demonstrations and social evenings has been arranged for the remainder of the year.

It is not too early to begin planning for the next Hunter Branch Field Day which will be held during the October long week-end. Because of the development of the Branch there will be some new equipment in us at this time this year. The 146 Mc. i.m. carphones are now available and some members have hoped that quite a number will have them by October. In addition, there is talk of network operation on the 100 metre band using carphones. Five members with other equipment conversion to 160 is reasonably simple and since these are available quite cheaply from the U.S.A. it is a difficult choice to be experienced in putting them on the air. The Westlakes Radio Club has good facilities for both 160 and 100 metre band. If any members seeking a test signal should get in touch with 2ATZ or 2AWX to arrange a time suitable. The suggested net frequency is 160.0 Mc. but members with other equipment frequency suitable should make them known to one of the committee members.

It appears that the duck-talkers are on the increase. The mobile on the air with Bill 2XT and Jim 2AHT being joined now by Col 2VJ. To prove that everything works just so, the here we have fitted in the new Premack 2A "shakedown" cruise arranged to the South Coast. From signals received, it appears to be going well. Whether or not the duck-talkers I am unable to say, but Bill 2ZL also has been absent for the past few weeks and rumour has it that he also is journeying on the South Coast. Could this be an omen? Yes, you've

the VERSATILE Range of 'TRIMAX' Products!

Our wide experience gained over 25 years has enabled us to Design and Manufacture a versatile Range of TRIMAX Transformers and Electronic Equipment with the emphasis on Design and Quality!



LM ERICSSON PTY. LTD.
"TRIMAX" DIVISION

FACTORY: CNR. WILLIAMS RD. & CHARLES ST., NORTH COBURG, VICTORIA. PHONE: 35-1303 . . . TELEGRAPHIC ADDRESS: "TRIMAX" MELB.

LM 35

FOSTER DYNAMIC MICROPHONES

SPECIFICATIONS:

Output Impedance 50 ohms or 50K ohms
Effective output level -55 db. [0 db. - (one) 1V. Microbar]
Frequency response 50 to 15,000 c.p.s.

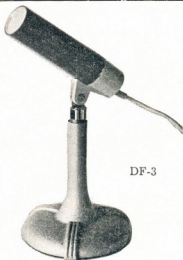
OMNI-DIRECTIONAL DYNAMIC:

Plastic Diaphragm. Swivel fits 5/8" 26 t.p.i. Stands.
Size: 4½" long, 1½" diameter. Colour: TWO-TONE GREY.
Cable: 12 ft. of P.V.C.

Retail Price 50K ohms: £4/16/0 + Sales Tax 10/0

Retail Price 50 ohms: £4/14/0 + Sales Tax 9/10

A QUALITY PRODUCT FOR TAPE RECORDERS & P.A. USERS



DF-3



Marketed by

ZEPHYR PRODUCTS PTY. LTD.

70 BATESFORD STREET, CHADSTONE, S.E.10, VIC.

Manufacturers of Radio and Electrical Equipment and Components

Agents: D. K. Northover & Co.; Neil Muller Ltd.; Homecrafts (Tas.) P/L; Jacoby, Mitchell & Co. P/L; T. H. Martin P/L.

guessed it. But ZZL on sidebar—it's frightening to contemplate. As the result of the silence of the senior citizen is however that can now tune around 46 and listen to all the signals without having the speaker cone bounce out across the table at regular intervals.

It is very pleasing to report that two new call signs now grace the v.h.f. bands. They are those of Frank ZZFX and Ian ZZIO. Frank is more or less a permanent resident of Newcastle and is likely to be in the quite frequently, but Ian, being a public slave, like myself, has had a whisper of a transfer to the wild north-west. How v.h.f. in the Pilliga scrub is not known to this writer. One thing is sure, however, there'd be little electricity. The weather, Irish Rose still has not managed to raise the aerial above grass height, but his signal in Sydney is recorded twice. Those who wish to be technically perfect radiating systems. This is due no doubt to the high quality of the string used in its construction.

Nothing whatever has been heard of the Cesecon contingent and it appears that the cold weather has driven them all underground. Arthur ZZMU has one of the flash new earphones and hopes soon to be on the 146 FM. I am sure that one of our members has subject to the "Clear" Wave. It appears that he now has no further use for them. The same gentleman may like to swap them for some rings and a watch. He says it's due to a change of emphasis—whatever that is. Colin ZBBC, exiled in Sydney, is sending out some good go-go signals. He's going to try the left foot first for some super c.w.

The calendar for the next few weeks indicates that there will be meetings on the 3rd June and 10th July at 8 p.m. in Room of the Clegg Building at Newcastle Tech. Don't forget also that the Westlakes Radio Club will be holding their Annual Field Day at the Club on Sunday, 12th June. The usual full programme of events has been arranged commencing at 8 a.m. and a concert is available serving hot food and drinks. See you at the Westlakes-Hunter Branch Field Day. 73, ZAXX.

CENTRAL COAST BRANCH

The last meeting of the Central Coast Branch of the W.I.A. was held at the School of Arts, Gosford, on April 15, 1966. The lecture for the evening was by Les VK2AXJ, "The U.H.F. and 432 Mcs. In Particular." It was a most instructive and interesting talk especially as he accompanied it with sketches, tape recording and a transmission by Dick

VK2ZCF on 432 Mcs., and various pieces of gear and test equipment from his own shack. The speaker included a description of a field strength meter, 13 el. yagi, 432 Parkes converter, band edge marker and wave meter. One of the outstanding points in the talk was the simplicity of building for 432 Mcs., keeping in mind that the skin effect is vital, and the large surface areas of the strips are essential. His coverage of the propagation was very interesting also. He reckons that constancy for 432 Mcs. is certain relative to shiping planning. The members were disappointed when he had to rush the last part of the talk because of a shortage of time. However, as a result of the talk we may have a few more converts to the u.h.f. in the Gosford district. 73, Mona ZAXS.

BLUE MOUNTAINS BRANCH

The March meeting of the Branch was held at the usual venue in Lawson where at the annual meeting a new crew of officers were elected for the ensuing year 1966-67 and resulted as follows: President, Derek ZNR; Vice-President, Ron ZADA; Secretary, Bill ZHF; Treasurer, Alan Smith; Construction Committee: Bob ZASZ, Trevor ZTM, and Don ZARI, with S.W. Dan, P. C. P. ZHF, Ron ZADA. Retiring President, Don ZART. A summary of the events and progress of the Branch that had taken place during the past year. After the business meeting, a social gathering was evening rolled into the usual rag chews and supper.

Arie ZAVA and Alex ZEX had a week's mobile up north and were heard many times and by accounts an enjoyable week. Noted some increased activity in the club in the last few months—let us hope it keeps up. Club Treasurer Alan has had a busy time, as he sat for the April exam, and just a few days before the exam, his wife presented him with a new hairbrush, both very much in business and congratulations to you and yours. Let us hope the same will be in order for your exam. Several members were at the April exam. Don and Alan enjoyed test bits at ZTM's Trevor ZTH, whilst both were being tutored for the said exams.

Bill ZHJ has been busy on the air working new call signs and has been heard on the fine business Bill, glad to hear it is working out so well, whilst Trevor ZTM has been having trouble with wind and his vertical 18AVQ which has now converted to 18AVQ and seems to be getting out very well.

Sid ZAVK has been down the coast at Wollongong for a few days. Overheard Sid putting a lot of people to the test on the air. His mobile, Atta boy, Sid! See you all—3rd Friday at Lawson. 73, Ron ZADA.

CANBERRA RADIO SOCIETY

The Canberra Radio Society held its third annual Radio Amateurs' Convention during the Easter holiday week-end (April 15, 16, 17, 18, 1966). This is becoming an annual must in the eastern states and this year's attendance was well up to expectations. A full week-end of contests, technically interesting visits and social functions took place.

Highlights of the week-end were the visit to the Deep Space Instrumentation Facility No. 42 at Tidbinbilla with its 85-ft. dish antenna with a gain of 33 db. and the Radio Australia, a figure of one-tenth of a db. at 2000 Mcs. and receiver loop selectivity down to five cycles per second. The visit to the Radio Australia, R.A.S., Nuclear Physics Dept. also proved of great interest as also did the trip to Belconnen. R.A.S. Transmitters cause some strange r.f. problems. New this year was the additional visit to the Mills Cross Radio Telescope which is nearing completion at Hockington, not far from Canberra.

Contests included 7 Mc. and 144 Mc. fox-hunts and hidden Tx hunts. A receiver sensitivity contest was also held during the week. A Saturday picnic lunch in the pleasant surroundings of the Cotter Dam Reserve.

On the Saturday evening the convention dinner was well attended and following the formalities the visitors were entertained by a short talk and slide show by Steve VKIVK, ex-VKOVK, and Ken VKOKH on their activities in Antarctica.

There was a film show on the Friday evening and also a highly successful fund-raising junk sale and prize-giving. The club is indebted to Mullard Ltd., A.W.V., Anodeon Electronics, Beijing Electronics, and R. H. Cunningham Ltd. and the VK2 Division of the W.I.A. for providing equipment and components for prizes.

An interesting feature in favour of the Canberra Convention is the visit to the Canberra seeing attractions with something for every-

one in the family. The Canberra Radio Society encourages the family outing aspect of their annual event and discourages the idea of a group of hams in a huddled bunch and another group of bored families trailing along behind.

The Canberra Radio Society is due to lose its club premises in the near future and has already disposed of its club station. It is hoped that this will not interfere with the plans for the 1967 event and to encourage the club members to have a few more new attractions with possibly competitions for the ladies, with prizes!

OBITUARY

FRANK LESLIE COOK (VK2ANC)

It is with much regret that we record the passing of Frank Leslie Cook VK2ANC, whose death occurred on Easter Monday after a long illness.

Frank was licensed in 1934 and operated first under the call sign of VK2FT. Following the death of his wife, he retired before World War II he allowed his licence to lapse, but after the war came back to the ranks of the amateur radio.

He was active mainly on 7 and 14 Mcs. for some time, but in recent years operated almost exclusively on 144 Mcs.

Being one of the old school of Amateurs, Frank was a keen builder of his own equipment. His time was also spent in the radio industry, but for many years prior to his final illness he was employed by the S.I.R.O. as a mechanical draughtsman.

Apart from his interest in radio, Frank was very active in Parents' and Citizens' Progress Associations in the Carlingford district, and the large and representative attendance at his funeral was an indication of the esteem in which he was held by many. The Institute was represented by Peter Campbell VK2AXJ (Divisional Council) and Ivan Agor VK2AIM, and the sympathy of all members was given to Mrs. Cook by sons David and Bruce.

ERIC LAKE, VK4EL

Eric Lake, VK4EL, of Belgian Gardens, Townsville, Qld., was born at Shrewsbury, England, 50 years ago. Came to Australia as a young man and was active in radio in 1932. He was employed with the P.M.G. in Townsville for the past years.

He was a member of the club with DXCC 14, 21 and 28 Mc. and holder of many Awards, he took an unflagging interest in tutoring many young aspirants for their tickets.

Eric, as all those who worked him, knew, was a competent code operator with an immaculate art and was a member of the R.S.G.B. and F.O.C.

He leaves a wife and two daughters.

JOHN (ROY) THORLEY, ex-VK4RT

John (Roy) Thorley, ex-VK4RT, of Emma St., Mt. Gravatt, was aged 54 and was a tragic and sudden victim of a heart accident. He was a Past President of the W.I.A., Queensland Division, and also a member of the R.S.G.B. and F.O.C. He was a man of much time and energy to the promotion of W.I.A. affairs in Queensland. A notable DXer, he had more than average knowledge of the international situation. Both received his ticket in 1935 and was well known amongst the phone men.

ALAN C. BUCKIE (VK6AB)

It is with deep regret that we record the passing of Alan Buckie VK6AB. Although Alan's health had not been the best for some time, news of his sudden passing came as a shock to his many friends and associates.

An old-timer in radio, Alan took out his call of VK6AB in 1935, and remained active until World War II put an end to Amateur Radio for some years. Alan joined the R.A.A.F. where he held the rank of sergeant until his discharge. He had worked for some time in testing production equipment in theatres but had little spare time to enable him to engage in Amateur Radio activities.

However, in recent years Alan became active again on 60 metres where he had made considerable progress in the membership of the 8 s.m. "Shaving Patrol".

The sincere sympathy of the members and the W.I.A. Divisional Council of the W.I.A. is tendered to Mrs. Buckie, her son, two daughters, and son-in-law Graham VK6ZZZ.

VK2 DIVISION

R.F. CHOKE. Type 8316

Made for the W.I.A. by Telecomponents. Suits your pi-coupler final. Rated to handle up to an 813 or pair of 807s or their equivalent, 2.5-3 mH. 300/500 mA. R.F., \$2.25 each.

TRANSMITTERS FROM SONAR BUOYS

Contains six battery tubes, one 3A4, three 6L4s, two CV820s, a dozen capacitors, 18 resistors, four coil formers, four miniature variable capacitors (screwdriver tuning with locking nut), min. 1 meg. pot., valve sockets with shields. All on a circular base 4 inches in diameter. Excellent condition. Price \$1.25 plus 25 cents postage. Ideal for stripping, Youth Radio projects.

These are some of the items carried in the store run by the VK2 Division. Both new and surplus lines are in stock. A catalogue is available by writing to Disposal Section, Wireless Institute Centre, 14 Acheson St., Crows Nest, N.S.W.

SOUTH AUSTRALIA

It's on again, gimmick master PanSy, also known as VK5PS, is away on holidays, not that he isn't mostly holidaying somewhere or another but at the time he is actually away from home and work and goes places, one such being the hills resort where financial gentils gather each Easter. As usual he set up in the usual quarters, and found a convenient tree, attached a dipole to which he fed the trusty type 3, and guess what? He applied a mode of modulation to it that was a complete surprise to all that tried to tune it. First of all it was thought that he had at last "joined the strength" but no, it was not that, then the next guess was that it was f.m., no again, was it pulse? None of us could work it out, finally it was found and found something entirely new, so everyone went out to work the enforcer 2XW, 9Q4 and so on and returned to SPS later in the day after he replaced the faulty mike with one that made his melodious voice sound nearly normal.

All contacts on that memorable day are asked to QSL, in order to receive one of the gold-plated cards issued on his DXpeditions, it is understood 3 I.R.C. coupons are needed!! Any s.s.b. stations in the QSOs need not include coupon over to it, and the c.w. types can cumulate a good file of QSLs of s.s.b. contacts, some having been denied him in the past.

Sideband must be spoken of at this point for on the last count the increase in strength of the mode is showing the growth to be even greater than earlier, and VK3 too. The latest figures are 785 for all VK, with VK3 at 95, it is interesting to note the "old-liners" that are going over to it, and the c.w. types that are finding it more relaxing and more effective.

Without wishing to take up any VK4 space, oh, we are friends are we not, because "he" is away, one must mention Delateth receivers, otherwise one would not be with it. It is fatal to be in some QSOs these days and not mention such receivers, for they are becoming such a part of the scene these days that it is a must to have a knowledge of them. As far as can be seen at the moment those outside the peasant class are Phil SMN, Dud 2DQ, Eugene 8AV, 5ZK, John 5LT, Garry 5ZK, 3ZGW and 5ZKA, all of whom have the receivers running or well on the way to that state, and the c.w. types, and so anxious are others to share the interest that a special programme is being arranged for a VK3 monthly meeting when the proud possessors of such gear will be prominent will be coming forward to show and explain them to us. Yes, even you Dud, so watch for tele. for that.

The pre-Peyton Place net, that always includes Nobby 5WK, Lee 5BH and Ron 5K3

have recently had to re-arrange their r.f. gain control with Ron having moved to the city from Riverton. And by the way the Admiral 5VB gained from Ron's move by acquiring the Riverton s.s.b. rig, so that Ron can proceed to drive himself up the wall again by building an exciter to end all exciters, this time using a mechanical filter. A gluton for punishment.

Tubby SNO is packing up to leave VK5, and will probably be heard very soon with his new pre-fab rig, and it is well proposed of most of his gear. Will be replacing it with "the strength". His drive will be missed from the Elizabeth Club in which he has been active for some time to the state. We all wish him well in his new sphere and hope also to hear him soon with his roving call QXNS maybe. Just who will volunteer to take his place in VK5 in contest participation, for his contribution in that field has been a valuable one to the Division.

Mention must be made of the excellent work being done by Mac 5MM in the matter of slow Morse instruction and practice for the many undergoing that part of their studies. Night after night on 32 megs, Mac pounds away at it and as a result of his work a number of students are able to crack it the next try. A pat on the back from us all, Mac.

By the way, next time a Federal Convention takes place it is hoped that VK3 will send PanSy to London to accompany the one sent last time by VK3.

The last meeting of the VK3 Division was a lecture night when Mr John Burt spoke on "Inconsolable" installation operating at W.R.E. and displayed a model of the antenna system, which he called two half lambdas, they were suspended from a lattice mast, and the wire which normally would have become the top guys was in fact copper, forming the antenna. Normal Guys elsewhere. Measurements are taken at frequencies from 1.5 megs. to 20 megs. by an ingenious system starting with a v.f.o. and when one member suggested acquiring it was hands off. Films and prints showing the reflected signals were displayed and explained, and a measuring diagram, measuring about 5 by 4 feet was displayed to demonstrate how the various oscillators (there were at least two) and frequency oscillators in it all played their part. The lecture also spread out on a table a schematic of the circuitry which was even larger than the block diagram. A most informative talk and introduced some new techniques to many.

Reference was made to the publicity given to the Australian satellite by Geoff 5TV, when he quoted that some misleading information had been published so he gave actual figures. It appears that two representatives from the Melbourne University Astronautical Society had flown up to Brisbane to seek W.I.A. Convention support for their project, the convention

had agreed to give support to a certain financial limit. No doubt this will appear elsewhere in due course.

There was no need for the caretaker's dog to do his usual scare-out job after the meeting for with no Fanny it finished by 10.30 p.m.

Did you know that Ian 5IZ has come by a 7400 and will be heard in the near future based east of the Divisional notes soon, and judging from the experimental relay last week we can expect a good result. Ian has a good future, it is many years since 7146 was regular in the matter of either original broadcast or relay.

Max 5GF heard saying the other day that he was going to try s.s.b. on 14 Mcs. soon, apparently he had a good go on c.w. and whilst pleased with the results was to turn to s.s.b. in the future.

Amongst those present at the last meeting were 5UJ of Whyalla, 5UX (until recently 5UX who has now moved to live here) at Alice Springs—and wishes he was back there too—and Len 5VF who was talking of "when he takes up radio again," there is still some hope, Len.

Important visitors to this QTH (Gawler) recently include Den 7DK, well known to most of us, and who was to be seen in the background through here on his way to Broken Hill, whose ramparts of democracy are so ably defended by 5DQ, who was seen in the background on 5.3 s.s.b. with a Galaxy and also on a.m. with a H.B. rig, both being powered by a solid state unit and used in the way of a relay. All excellently made and fitted. Oh yes, there was room in the front seat for his XYL, but she was not allowed to be confined to the back seat. It was learned later that he was out to Steven's Creek which is 9.99 miles from the Hill, or is it the entertainment centre that is the Hill, and he was out to the creek. The Galaxy chaps have trouble with the dial drive vibrating when in motion just ask Don or Dud who will tell you into a secret, and give the solution.

The Gawler "Happy Gang" have little to remark on the subject of the Division of Les SAX, who mostly calls CQ and stands back for the choice calls, the rest here have been talking about the v.f.f., which of course may or may not be correct, but where. If anyone has a reasonably recent copy of the call-book that they don't want, then let them know Len who has been recently he was trying to find Bob's 5ZDX address, and on reference to the only copy of the call-book that it was noted that Bob's call was not listed.

Heard 5HH telling how he caught a 34-lb. cod on the 1000 ft. line, and that he had he was in no way encouraged by Hughie 5BC who said that somewhere in the local paper he had read about a character at Walkerville who got a 70-lb. cod on the 1000 ft. line. He had 290 countries to someone like Stew. 5M3I, 5LG and 5CV got into a mixed up contact one evening starting on antenna it drifted to fishing and grandchildren. George tells some good fish stories but it would not do to tell the same warbler what George put over. They even washed historical a bit. Quite interesting. Ian 5IZ putting up beams and has some 2000 feet of wire strung up over about 3 acres, with about 800 feet of feed line, plus a tower some 60 feet high. What a "farm," easy to see he is not a suburban type.

A recent evening produced an unusual complaint. A chap complaining of QRM. Nothing unusual about that you say, O.K., but this complaint had to do with QRM, and the chap was one I leave to your imagination, or best we have Pansy deal with it next month.

At the beginning of the year H.B. Handbook is the following "How it all started... and if you think the beam you are using is a recent development, consider the fact that Greeks used a rudimentary form of beam in 400 B.C. and Marconi employed a parabolic reflector to extend the range of his equipment before the turn of the century. All sound and nothing new under the sun, does friend Yagi turn over at this?

Heard 5JX saying that his XYL was painting the house and that his part of the job was to hold the light. Boy has he seen the light. A voice in the background of a 5.5 meg. transmission "You are coming in on the B.C. receiver inside"—momentary silence, then, "Well you can switch it off." Now is that for a quick means of overcoming B.C.I. in one lesson. No names mentioned.

5TV has done some research lately and come up with the idea of using his contacts, on request, admitted some association with photography and now suggests an amateur photography position. It is a possibility. 5DR has advised that he has been posted to Malaya in June, R.A.F. type. That great outdoors man 5TV says he prefers portable operation over lunch time rather than stopping to eat, must eat sometime Vic, all the same he has found an ideal site at Lady Bay near Norhavenville. Victor 5VH and Max 5GF who was a Victor Harbour over the

CRYSTAL DIVISION

Manufacturers of Quartz Crystals for Frequency Control and Crystal Filters for Highly Selective Circuits announce:

NEW LOWER PRICES FOR CLOSE TOLERANCE GOLD PLATED CRYSTALS FOR AMATEUR APPLICATIONS

- | | |
|---|---------|
| ● 1.8 Mc. to 14.999 Mc. $\pm 0.005\%$ in Style "D" holders, $\frac{1}{2}$ " pin spacing | £2 8 6 |
| ● 15 Mc. to 47.999 Mc. $\pm 0.005\%$ in Style "D" holders, $\frac{1}{2}$ " pin spacing | £2 10 6 |
| ● 48.0 Mc. to 61.0 Mc. $\pm 0.005\%$ in Style "D" holders, $\frac{1}{2}$ " pin spacing | £2 16 3 |
| ● 100 Kc. $\pm 0.005\%$ in HC13/U holders, $\frac{3}{4}$ " pin spacing* | £4 10 0 |
| ● 1 Mc. $\pm 0.005\%$ in Style "D" holders, $\frac{1}{2}$ " pin spacing* | £4 10 0 |
| * Specially designed for Crystal Calibrator purposes. | |
| ● 455 Kc. nominal Crystals for Filter applications in Style "D" or "E" (B7G) holders | £4 10 0 |

Many other types and tolerances are available from our standard production. Please consult us on your Crystal requirements.

PYE LTD. CRYSTAL DIVISION

CLARINDA RD., CLAYTON, VIC. (P.O. Box 105). Phone 544-0361

STATE OFFICES IN ADELAIDE, BRISBANE, HOBART, PERTH AND SYDNEY

● DISPOSAL BARGAINS ●

AT OUR BULK DISPOSAL STORE

8 PARK STREET, GLENFERRIE, VIC. (OFF GLENFERRIE ROAD)

Phone 81-1935

(Mon. to Fri., 10 a.m. to 5 p.m.; Sat., 10 a.m. to 12.30 p.m.)

NEW VALVES

1A3	50c	5U4GB	\$1.45
1A5	\$1.50	5V4G	\$1.75
1A7GT	\$2.60	5Y3	\$1.38
1C7	50c	5Y4	75c
1D4	75c	5Z3	\$1.75
1D8	75c	6A3	75c
1F5	\$1.00	6A6	75c
1H5	75c	6AB7	\$1.00
1K5	50c	6AC7	75c
1K7	50c	6AG5	50c
1L4	50c	6AG7	\$1.25
1L5	\$1.00	6AJ5	75c
1LNS	50c	6AK5	\$1.50
1M4	50c	6AL5	\$1.40
1M5	50c	6AM5	\$1.50
1P5	50c	6AM6	\$1.00
1Q5	50c	6AN7A	\$1.65
1R5	\$1.89	6ARTGT	\$2.10
1R5	\$1.75	6ASTGT	\$2.00
1R5	\$1.60	6AU9	\$2.45
1T4	\$1.00	6AUBA	\$2.40
1U4	\$1.60	6AV6	\$1.40
1U5	\$1.60	6B6	75c
2A5	75c	6BA6	\$1.55
2A7	75c	6BE6	\$1.55
2E21	\$1.20	6BL8	\$1.80
2E26	\$2.50	6BM8	\$1.55
2X2	50c	6BQ5	\$1.70
2A4	\$2.50	6BR5	\$1.45
2A5	\$1.00	6BX6	\$1.45
3Q5	\$1.00	6BY7	\$1.45
3A4	\$1.00	6BZ6	\$1.90
3V4	\$1.50	6C4	50c
3AR4	\$2.60	6C8	\$1.00
3A54	\$1.45	6C97	\$1.55
3R4G7	\$3.75	6CH6	\$2.35
3T4	\$1.75		

NEW VALVE SOCKETS

832A	Sockets	20/- each
4/25A	"	20/- "
Acorn	"	3/- "
Loctal	"	2/- "
EF50	"	2/6 "
VCR97	"	10/- "
805	"	12/6 "
EA50	"	2/6 "
5-pin	"	2/6 "
6-pin	"	2/6 "
7-pin	"	2/6 "
7-pin P.T.F.E. Sockets	"	5/- "
Loctal P.T.F.E. Sockets	"	5/- "
Special completely shielded	"	
7-pin P.T.F.E. socket and shield	"	10/- pair

NEW TOGGLE SWITCHES

S.P.S.T.	5/- each
D.P.D.T.	10/- "

NEW CONDENSERS

Metal Pack, E/I P/tail		
1	μF.	350 volt
0.25	"	350 "
0.1	"	100 "
0.1	"	500 "
0.05	"	350 "
0.01	"	1000 "
0.005	"	1000 "
0.002	"	1000 "
0.001	"	1000 "

POTENTIOMETERS

Wire wound, 1 inch diameter.
 Sizes available:—
 5 ohms, 10 ohms, 25 ohms, 50 ohms,
 100 ohms, 250 ohms, 500 ohms, 1000
 ohms, 2000 ohms, 10K ohms, 50K
 ohms. 4/- each.

NEW CHANNEL LOCK PLIERS

Type 337W	20/- each
Type 356 End Cutters	20/- "

NEW PLUGS AND SOCKETS

Octal Plug	3/6 each
Octal Socket	1/6 "
5-pin Speaker Plugs	2/6 "
4-pin Speaker Plugs and Sockets	1/9 "
6-pin Jones Plugs and Socket	7/6 "
Pye Plugs	2/- each
Pye double bulk Chassis Sockets	2/6 "

MODULATION AND DRIVER TRANSFORMERS

Modulation Transformer, 15 watts, pair of 6AQ5 to 2E26 valve.
 Also Driver Transformer, single ended primary to push-pull grids of 6AQ5s. £2 the lot, or mod. Trans. 30/-, and Driver Trans. 10/-.

NEW CHOKES

7-5 H. 125 mA.	30/- each
8 H. 300 mA.	50/- "
14H. 60 mA.	12/6 "

SPECIAL BARGAINS

Carpenter Relay and Socket, Type 3E1, 1800T 250 ohms, 900T 200 ohms, 15/- P.M.G. Strip Boards, containing 24 Jacks 30/- each
 P.M.G. Strip Boards, containing 48 Jacks 50/- each
 Head Phone Cords, new 4/6 pair
 3-pin Plug and two yds. Cord 4/6
 Mixed bags of Resistors (50) 12/6
 P/M Fuse Holders 4/6 each
 72 ohm Co-ax Cable, 35 ft. lengths, 3/16 inch diameter 10/-
 72 ohm Co-ax Cable, 27 yd. lengths, 3/16 inch diameter 20/-
 Vibrators, 122 Type 20/- each
 122 Aerial Packs 60/- each
 12-core Cable with Plug, 22 yards long 50/-
 Wrecked 733D Receivers, less valves 40/-
 Dural Tubing, 12 ft. lengths, 3 inch diameter 3 for £1
 P.M.G. Key Switches 7/6 each
 Radiogram Chassis—straight-out B/C new, completely wired, less valves and speaker, 30/- Tube types 6V4, 6M5, 6BE6, 6BH5, 6BD7 available, extra.

HAM RADIO SUPPLIERS

Phone 81-1935

Established 1947

Easter week-end with a real man-sized 60 watts of static, was this he is proceeding with a 100 watt rig, what then Max?

Tom 57L did some shovel work (horrible word) over Easter, shifting some concrete slabs and got to work on five tons of sand to level and top dress some lawns. First he had to buy a shovel, quite an idea. Right, but now that the job is done, and that he has seen the light, who wants a shovel, no immediate response. But he has a shovel. Right, at the next buy and sell night. In spite of all this his weight did not reduce.

SFR does some good modelling while travelling. He's quite an idea, and recently had a good contact with a VK3 near Geelong, good signals it is understood but Bill was disappointed. He's a good one. Highway, not the best of places for that job.

Jack 5LN has gone over to the "man's" evening and even fixed a product detector for Athol 5LQ, over to you Athol for the next move, but don't treat it like your 3-element beam job.

TFP will be back next month, chaps, my sympathy to you all. 73, Compz VK5EF.

WESTERN AUSTRALIA

A happy Pancake Saturday to you all, and greetings and congratulations to the new VK1 Council. I say "new," although I've known the VK1s for a long time. I have a lot of confidence in those who served us so well last year!

It is with deep regret that we record the passing of a good friend, Doc 6HQ. He will be greatly missed, not only by those who worked with him on the bands, but by his many friends throughout the country area.

Moves to hand that Doc 6AQ has been on the news to see some of our Eastern neighbours. Possibly the VK1s are seeing good things. Doc's change, caused the brief stop-over in VK3. Hope you were able to round up a couple of leak-proof pens for the satellite recorders while you were there.

There should be some noticeable QRM from the Mandurah area now with both Jack 6BU and Ian 6TJ. The VK1s are back. Now take it easy men, one at a time please.

A recent visit to some of our country hams confirmed that the VK1s are active. I understand that Ian 6XX has his new beam mounted on top of a mighty tower and was recently heard working W's on 40 metres.

Further east at Wickiepin, Aub 6XY has been crouched over text books and drawing board and is planning to build a 100 watt Type 4 side-band rig which promises to be an extremely good one.

Also, coming at large around the countryside, Jack 6RT operating portable. Disguised as a quartermaster, he operated as communications officer on the tour of the north-west. He also does an abetting him was a busload of students.

Reports from Y.R.C. leaders indicate an upsurge of interest here in the west. Good luck boys—and girls—hope to see many of you on the bands soon.

It was interesting to see a couple of YLs tracing our meeting recently. What a pity I couldn't talk them into forming a supper committee. Talking to some minds. I hope Cyril and I it is hoped that he enjoying better health. Perhaps we will see you at a meeting or on the breeze soon Cyril.

It was interesting to see a couple of YLs tracing our meeting recently. What a pity I couldn't talk them into forming a supper committee. Talking to some minds. I hope Cyril and I it is hoped that he enjoying better health. Perhaps we will see you at a meeting or on the breeze soon Cyril.

Another old-timer enjoying a new lease of life is Frank 6FL. When last seen Frank was smiling happily at the success of his newly-created hunting dog. He has been receiving some of the reports he has been receiving.

Hear Jim 6RU chewing the rag the other night on 80 metres. He was talking about a meeting that he enjoyed the experience almost as much as hunting rare DX.

There was a state conference interest being shown in W.I.C.E.N. although the struggle to receive official recognition is a long, hard one. Meetings with the appropriate authorities are still being held.

With the onset of winter it is hoped that more life will appear on 80 m, during the winter months. I hope to see you on the bands and the ever-present lure of the one-eyed monster.

It was interesting to see our sunny (?) shores was "The Admiral," officially recorded as Vern VK5VB. We hope that both Vern and his XYL benefit from their brief stay in Sandrobert Territory.

Our Federal Councillor, Roy 6RY, is still raving on about the many attractions of Queensland! It sure must have been a beaut. convention! We certainly can't hope to match some of the things he has told us about.

Popular success has attracted many of the V.H.F. boys are secretly preparing for the launching of Australia's first satellite. It looks as though the de. lads might get a look in this time. Don't know. How about that, you V.H.F. guys? Hi!

From reports given at our annual meeting it is pleasing to note that prospects for the forthcoming season are brightening. The recent drive for membership has netted the Division some 60 or so members in 12 months.

Sunday morning news broadcasts have reached an all-time high, with services on 160, 80, 40, 20 and 8 metres f.m. A new service recently introduced is directed to our members in the far north and at Cocos and Christmas Islands. Fine business Bob 6BE and relay station operators Brian and Peter 5ZEP.

The march of progress has swept up Bill 6WY and he had constructed a new sideband rig for portable use at his shack at the Moore River. Next thing we know the dustmen will be complaining about the weight of all these ATUs that are being consigned to the rubbish bin.

Another welcome voice back on the band is that of our Patron, George 6GIF, and we are hopeful that you will continue to enjoy improving his signal.

Somebody stop me quickly or I will be taking up too much space! Thanks, now I can bow out quietly.

Let's call him like mine it would be a piece of cake to sign as "DALSY," but in deference, or difference, or something to our esteemed friend from VK5 will endeavour to contain myself. 73, Ross VK6DA.

TASMANIA

What a month this April has been. I seem to have been out more nights than I've been home, not only the usual meetings, but two extra Council meetings as well, and no mention of the VK1s. I understand the last one towards the end of the month, going till around 11.30 p.m. I think every member of Council is on some other committee or sub-committee, or with institute business, or none of us look like getting any real let-up for a few months—except me. I'm a bit of a grumbler, especially when one's efforts show signs of bearing fruit (who's talking about gardening?).

With any luck as many councillors as possible (it looks like six of us at this stage) will have visited the north-west, northern zone by the time you read this. The idea being to explain to members (and answer their questions) the meaning of Federation, and its effect on the Institute as we know it at present.

Which brings me to the next subject on my list, which happens to be the Easter Convention which was held in Brisbane. From what Ted 7EJ tells us he had a right royal time, and although several agenda items were rather uninteresting, most of them were well reached, the convention as a whole, and the cordiality shown visiting councillors by the VK4 was excellent. I hope we can do as well if not better in '67, when we are the hosts to the other Divisions.

Pencil bookings have already been made for another Easter Convention, and I hope for next Easter, and if the way the last five months have flown continues, it won't be long before we'll be back in the VK4. If we had fewer trips to Easter than we might lose Ted 7EJ to VK8, but I'm pleased to inform you, he's not going (who said "What a pity!").

What a great boost was given the W.I.A. with the publicity in the press and on radio and the return of the VK4 to the VK1 project, our congratulations to all concerned, both with the actual project itself and the publicity.

At the Amateur Advisory Committee meeting in April a change of form was decided upon, and it is hoped that it will be a success when in doubt regarding splatter, etc., especially with s.b. stations, just in case one's receiver is at fault, incidentally, if at any time you are in doubt, ask for the VK1 member of the A.A.C. (or anyone else for that matter) take it in good part and do the right thing.

Ian 7ZZ told me tonight that he has at last got a W5 confirmed (Mississippi) after six months of hunting. He has also been working 128 countries but worst luck, they're not all confirmed. DX has been extra good of late on 15 and 20, with openings to Europe especially.

Now for a few tit-bits, Dave 7ZAI has shaved his job (transferred to another location) within the department. He's back to him again now chaps, he's no longer the monitor. Den 7DK is at the time of writing away on the mainland, and Charlie 7KS is off to Sydney within the next couple of days (don't know for how long). He has been very busy with his business, but he's a busy man, truly is rebuilding also, expect it will take most of the winter months. I hope to be "all systems go" by next summer. I hope to be as well as having me c.w.b. then, at least six of us so-called "half fulls" hope to be "full fulls" fools after the July exams.

That's about all for this month, except to remind you that the "R.D. Contest" is not very far away, only a couple of months. Also, if you are still unfinancial, then brother this will be about the last of the piggy bank read of mine (that's if you ever do read it).

73, Geoff 7ZAS.

NORTH WEST ZONE

The last meeting of this Zone took place at Lakin's Hall, Ulverston, on 3rd May in the form of a social affair with 17 persons present. Brian 7ZBE gave a very instructive lecture on transmission lines and showed the gathering the importance of a low reflected reading on the line and the importance of a very practical demonstration, of s.w.r. measurements, using a 2 mX transmitter coupled through a variable capacitor to a 100 ohm load, and the set-up and by varying the adjustment of the gamma match on the antenna, was able to show his theory on s.w.r. readings and what have you.

After Brian had stepped down, Sid 5FZ produced a tape of his "moving" projector, which turned out to be one he had borrowed for the evening, and not as every one had surmised, the result of rifling the tin on top of the wardrobe. The tape showed a number of very good films dealing with civil defence and nuclear explosions.

Supper was served 7ZRS/TMS style and one of the better experiences was to hear the fact that George 7ZAL has now attired himself in a red spotted cravat and spiked shoes and jockey shorts, and he can be heard yelling "fore" whenever his powerful shoulders send a ball flying in the wrong direction.

Ken 7AI has not notched up 400 hours solo flying—or was it 400 dB's worth of effort I can't quite remember which!

Ken 7ZAI has that rx chassis still sitting on the bench, waiting for the time when he will have to give up working the Gs on 20 mX am. Ken and get down to some unfinished construction work. 73, TMS.

NORTHERN ZONE

Since the last notes local activity has been better, and the meeting turnout is higher, but we still have a long way to go to break any records. What about it chaps? At our last meeting we welcomed two new members, one of them Anyway who has decided to rejoin. They were Carl Waldron and Bob Jackson with Don 7DB joining our ranks again. Sorry to hear that shifters were with the meetings, Don, but let's hope that you can make it now and again.

It was interesting to see a couple of YLs tracing our meeting recently. What a pity I couldn't talk them into forming a supper committee. Talking to some minds. I hope Cyril and I it is hoped that he enjoying better health. Perhaps we will see you at a meeting or on the breeze soon Cyril.

It was interesting to see a couple of YLs tracing our meeting recently. What a pity I couldn't talk them into forming a supper committee. Talking to some minds. I hope Cyril and I it is hoped that he enjoying better health. Perhaps we will see you at a meeting or on the breeze soon Cyril.

Another old-timer enjoying a new lease of life is Frank 6FL. When last seen Frank was smiling happily at the success of his newly-created hunting dog. He has been receiving some of the reports he has been receiving.

Hear Jim 6RU chewing the rag the other night on 80 metres. He was talking about a meeting that he enjoyed the experience almost as much as hunting rare DX.

There was a state conference interest being shown in W.I.C.E.N. although the struggle to receive official recognition is a long, hard one. Meetings with the appropriate authorities are still being held.

With the onset of winter it is hoped that more life will appear on 80 m, during the winter months. I hope to see you on the bands and the ever-present lure of the one-eyed monster.

Stockists of Amateur and Electronic Components for the Amateur Constructor and Hobbyist

First Ring, Write or Call on
WILLIAM WILLIS & Co. Pty. Ltd.
428 Elizabeth St., Melb'ne. Ph. 34-6539

COMPUTER CIRCUIT BOARDS

Containing switching transistors, resistors, condensers, diodes, etc. 20c per transistor.
Also in stock: 1000v/0.75a. diodes, \$1.50;
OA200-type silicon diodes, 100 for \$5.
Everything tax paid and post free. \$2 min.

AUSTRALIAN ELECTRONICS
76 View Street, Hobart, Tasmania

Repairs to Receivers, Transmitters; constructing and testing; xtal conv., any frequency; Q5-ers, R9-ers, and transistorised equipment.

ECCLESTON ELECTRONICS
146a Cotham Rd., Kew, Vic. Ph. 80-3777

A. R. R. L.

Associate Memberships (and renewals) are available by forwarding £2/14/- (plus 6d. interstate cheques) to:

Business Manager, W.I.A.,
49 Cookson Street,
Camberwell, E.6,
Victoria.

This includes the regular arrival of

"QST"

HAMADS

Minimum 5/-, for thirty orders.
Extra words, 2d. each.

Advertisements under this heading will be accepted only from Amateurs and S.W.I.A. The Publishers reserve the right to reject any advertising which, in their opinion, is of a commercial nature. Copy must be received at 8.0. Box 38, East Melbourne, C.5, Vic. by 4th of the month and remittance should accompany the advertisement.

BARGAIN: Q multiplier, which will increase selectivity and has variable null point for removing interference. Originally from Drake 2B and will work well with any 455 Kc. I.F., complete with small speaker in same case. £9/10/-, VK3AQ, 383 Warrigall Rd., Burwood, Vic. 28-2326.

COLLINS KWM2, all band s.s.b., V.O.X., PM2 solid state power supply, Collins mike, as new condition, \$1,000, O.N.O. S. G. McLean, VK5ME, 22 Celtic Ave., Clovelly Park, S.A. 76-1491.

COLLINS KWM2, factory mods., top condition and performance. VK2WS.

COMMAND 7.0 meg. Tx modified (QST) together with plugs and cable and Type S power supply, £15. One 3BX Tx unmodified, £10. Power Supply, 1000 volts at 300 mA., taps at 950v., 750v., 600v. and 500v., x 2 866As swinging choke input, 2 section choke-

condenser filter, £12/10/- One Rx R1155B with inbuilt 6V6 and speaker, no power supply, £10. J. E. George, VK1JG, 28 Holmes Crescent, Campbell, A.C.T. Phone 49-8380 after 1800 hrs.

FOR SALE: Complete Station. c.w./a.m. Tx, Gelsco v.f.o., home-brew, 120 watts, neat console cabinet. Rx star 600, modern JA Rx, a.m./s.s.b., filter, calibrator, S meter, bandspread, etc. £225 (\$450) the lot. Will separate for reasonable offers. Also small 2-band Tx, a.m./c.w., xtal converters, sundry parts. Best offers. VK3WW. Phone 465-2991.

FOR SALE: Galaxy 5-band Transceiver with vox, mike, a.c. power supply, \$500. Save \$100 on new unit. Would consider part exchange for ART13 Auto-Tune Tx or Edgystone 640 Rx, "Commander" Rx or similar. D. M. Sloman, Spreyton, Tas. Phone Devonport 72117.

FOR SALE: National NCX-3 Tri-band s.s.b. Transceiver, complete with power supply, \$395. AR88 Receiver, good condition, \$95. F. R. O'Sullivan, Box 92, Bundaberg, Qld.

FOR SALE: Need room to move around! Shack clearance: Command Transmitters, 4.0-5.3, 5.3-7.0 Mc., \$6. Command Receivers, 3-6, 6-9 Mc., \$15. Q-5ers, 200-500 Kcs., \$20. BC-221 Frequency Meter with calibration book and a.c. supply, \$60. AT-14 Transmitter, \$100. Further lots of small and large valves, meters, A.W.A. V.T.V.M. and crystal calibrator, audio frequency meter, AT-13, Triplett signal generator, 200 Kcs.-120 Mcs., old-style tube tester, etc., etc. Arnie Bles, VK2AVA, 33 Plateau Rd., Springwood, N.S.W. Telephone 51-1394.

FOR SALE: Philips PCR3 Rx 2.3-23 Mcs. plus B/c., 6 valves plus Si. Recs., S meter, a.c. P.S., spkr., £25. Box containing all parts for 12 valve AR8 Rx magic eye, L.F. and H.F. bands, H.F. bandspread, a.c. P.S., spare tubes, new condensers throughout, all bandwidth circuit and diag., £10. R1155 Rx., 7 tubes plus Ge. A.N.L. with spkr., £7. Assorted other radio gear. Geoff Thomson, 115 Hawden St., Heidelberg, N.22, Vic. 45-6734.

FOR SALE: Swan 350 Transceiver, in new condition (had less than 20 hours' use), complete with a.c. power supply and speaker, \$400. Pair 6146B Tubes, new, in cartons, \$10. G. P. Butler, VK1GP, Flat 12, Block B, Currong Flats, Braddon, A.C.T.

FOR SALE: Three Command Transmitters, 80-40-20 metres, modified for 12v. operation, buffer-doublers, £7 each. Command Receivers: 3-6, £7; 200-550 Kcs. (Q5er), £9. A.W.A. Class C Frequency Meter, £10. Paton V.C.T. Valve and Circuit Tester, £10. Philips TA101C Signal Generator, £10. One home-brew 7 Mc. mobile Transceiver, containing Q5er tuneable I.F., £18. One 100 watt 400v./200v. transistorised Power Supply, £15. Plus other assorted gear. VK2GM, 78 Campbell Hill Rd., Chester Hill, N.S.W., 6-8 p.m. or week-ends, business phone B0544, ext. 294.

HALLICRAFTERS Receiver, SX117, \$500. Companion Transmitter HT44, including speaker and 115 volt power supply, \$600. Very satisfactory transceive operation can be obtained, using both Rx and Tx together. Both as new, excellent condition. 3-element wide-spaced 20 metre beam, 23 ft. boom, Gamma matched, 1 1/2 in. diam. eel; home-brew, very well constructed, \$90. Hamm M. Rotator, 115 volts, \$140. 37 ft. telescopic (wind up and wind over) tower \$90. T. E. Straughair, VK3ABV, 23 Tristania St., E. Doncaster, Vic.

SELL: Apache Transmitter, a.m./c.w. 150w., 2 v 6146 final, time sequence keying, final can be switched to AB1 linear with step-down transformer, £100. Drake 2B Receiver and 2AQ Multiplier/Speaker combination, 110v., £195. Trimax Power Transformer, 1150/1150, 400 mA., and Trimax 10 Hy. Choke, 400 mA., £10 pair. Type 3 Mk. 2 Transceiver, £15. AR22 Rotator, £15. Heathkit Voice Control Unit, £12/10/- AR88D Receiver, £95. Pyrox Tape Recorder, 7 1/2 i.p.s., £35. Russell Bradshaw, VK3SX, Phone 82-2152.

SELL: Partridge high fidelity Output Transformer, type WWFB/O/1.7, 20 watts audio, primary 10/12 kilohms, 8 separate secondaries of 1.7 ohms each, \$10. Mechanical Filter, 455 Kcs., 6 Kc. bandwidth, \$20. 1000.00 Kc. Crystal, \$5. 5000.00 Kc. Crystal (WWW), \$5. 0-1 mA. Meter, 6 in. dia. face, 270° scale, in polished case, \$20. O.N.O. Vox Unit, complete with valves and multiple c/o relay on 3 1/2 in. panel, \$15. O.N.O. 2 metre Tx, 6/40 final, complete with modulator, P.T.T. dynamic mike and all power supplies, \$100. O.N.O. Ring Heppburn 96-2414 evenings or call 4 Elizabeth St., East Brighton, Vic.

SELL: 2 x 4X150A Valves, one 5-way coaxial switching unit, amphenol fittings, both new. Transistorised keyer, built-in oscillator/monitor, or swap for rotator and beam with cash difference. J. McCulloch, Flat 2, 23 Cresswell Ave., Niddrie, Vic.

WANTED: Cheap bug more key in good condition. Coil boxes and circuit diag. for A.W.A. AMR101 Rx. R.T.T.Y. gear. Valves type CV302 and CV327 (ECHE2 and EF52). Circuits AN/APN9 (R.C.A.), has Rx indicator. Geoff Thomson, 115 Hawden St., Heidelberg, N.22, Vic. 45-6734.

WANTED: Circuit of Tasma FM6000 Car Phone by J. R. White, 6 Hadley Court, Glen Iris, S.E.6, Vic. Phone 20-1660.

WANTED: Coil Boxes for AR7 Receiver, all bands. Please write to VK6ZFH, G. Hufner, 8 South St., Dallowall, W.A.

WANTED: Type 3BZ Transmitter rec. with 12v. power unit and book. K. McCarthy, VK4DU, James Ave., Currumbin Beach, Qld.

WANTED: 6 m. Transceiver or compact 6 m. Transmitter, with or without converter. Write details, W. Bennett, 24 Oxford St., Baranda, Qld.

A LARGE RANGE OF TRANSMITTERS, RECEIVERS, TEST GEAR, AND DISPOSALS RADIO PARTS AVAILABLE

★ BC221 FREQUENCY METER

Complete with Calibration Book, Crystal, and Headphones, \$90.

★ SCR522 V.H.F. TRANSMITTER/RECEIVER

100-150 Mc. Complete with tubes, \$28.

★ A.W.A. MR10 F.M. CARPHONES

70-85 Mc. 2E26 p.a. Complete with all tubes, power supply, control unit, handset, leads and plug for antenna, \$34.

★ COMMAND TRANSMITTERS

4-5.3 Mc., 5.3-7 Mc. Complete with tubes, \$15.

★ TR3624 TRANS./REC.

Approximate frequency, 200 Mc. Contains 46 miniature tubes, \$30.

★ VARIACS, GENERAL RADIO

115v. 500w. New, in cartons, \$6.

★ 3J160E HIGH POWER TRIODES

120 Mc. full ratings. Heater 10v. 29a., anode max. volts 3000v., anode max. current 1000 mA. RF output 2150 watts. \$8 each.

★ VALVES

EF50 20c ea., 7C7 10c ea., CV131 6CQ6 50c ea., 6AC7 20c ea., 6AL5 20c ea.

★ SIGNAL GENERATORS

Type LSG10, 120 Kc. to 260 Mc., \$26. Type LSG11, 120 Kc. to 390 Mc., provision for xtal, \$30, both plus freight.

TE22 Audio Generator, freq. range: sine 20 c/s-200 k/c., square 20 c/s.-25 k/c., in four ranges. Output, 7v. p-peak. Output impedance, 1,000 ohms, \$42.

★ METERS, P25 TYPE

0-500 uA., \$5.25; 0-100 uA., \$6.95; 0-1 mA., \$4.50; 0-10 mA., \$4.50; 0-50 mA., \$4.50. Full range of Meters and Multi-Testers available.

★ CO-AXIAL CABLE

UR70 72 ohms, 3/16 inch diam., in 27-yard rolls, \$2 plus 75c pack and post. In as new condition.

★ 80-40 METRE TRANSCEIVER

San Electronics QTR7. Tx: 6BQ5 p.a., 6BQ5 modulator, xtal locked. Rx: Tunes 3.5 to 11 Mc., 1 watt audio output, 230v. a.c., \$90.

WANTED TO BUY

Communication Receivers, Test Equipment, etc. Call, write or phone. Equipment inspected and picked up at your convenience any night or week-end.

★ BC348 COMMUNICATIONS RECEIVER

200 Kc.-18 Mc. in six bands. Xtal filter and b.f.o. Genuine original condition, \$90.

★ RAIB COMMUNICATIONS RECEIVER

150 Kc.-15 Mc. in six bands. B.f.o., etc. Genuine original condition, with a.c. power supply, \$70.

★ TR10A MULTIMETERS

100,000 ohms per volt. Ranges, DC volts: 0.5, 2.5, 10, 50, 250, 500, 1k. AC volts: 2.5, 10, 50, 250, 1k. DC current: 10 uA., 1 mA., 25 mA., 250 mA., 10A. Resistance: 20K, 200K ohms, 2 meg-ohms, 20 megohms. To clear, \$25.95.

★ POTENTIOMETERS

Wire wound 40c each; carbon 25c each.

★ RESISTORS

1/4 watt, I.R.C., Welwyn, Eire, Ducon, Philips, \$2 per 100.

★ MINIATURE CAPACITORS

New shipment. 600 v.w. Values: 0.001, 0.02, 0.005, 0.0005, 0.0002, 0.0001 uF. \$2 for 80 plus freight.

★ 1/2 H.P. 2-STROKE MOTORS

Ohlsson and Rice. Brand new, just imported from America. Weighs only 5 1/2 lbs. 6,300 r.p.m. supplied with 3:1 reduction gearbox, output 2,100 r.p.m. Ideal for driving Alternators for Field Days. Fuel consumption 1 pint per hour. \$30.

★ CRYSTALS

Personal shoppers only, \$1 each.

★ SPECIALS

3AP1 C.r.o. Tubes. New in cartons, £1.25. Vacuum sealed Relays, 670 ohm coil, four change-overs, 50c each.

3000 Type Relays, 50 c each.

Dual 3000 Type, £1.50 each.

Brand new 4 inch Speakers, \$3.

Inter-office Phones, 15-station type, \$4 each.

7-pin skirted Valve Sockets, P.T.F.E., insulation, silver plated, only 20c each, c/w. shield.

★ TRANSISTORS

Brand new. OC72, OC44, 2N132, OC66, OC45, 80c each. AT1138 Power Transistor, 30w., Class B, \$3. Also Diodes: OA71, OA81, OA95, 35c each.

ANY QUERIES

Beginners are welcome, ask Jim and Laurie Gardner any questions. They are Amateur Radio operators and will be only too pleased to assist.

ALL ITEMS FREIGHT EXTRA

UNITED TRADE SALES PTY. LTD.

280 LONSDALE ST., MELBOURNE, VIC. (Opp. Myers)

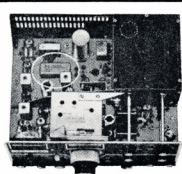
Phone 32-3815

IF YOU'RE LOOKING FOR

SELECTIVITY

LOOK INTO THE
SWAN-350

AND ITS HIGH FREQUENCY
CRYSTAL LATTICE FILTER

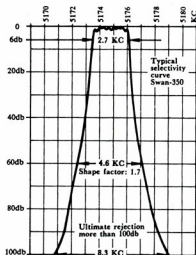


One of the reasons why the Swan-350 is the top selling transceiver today is its exceptional selectivity provided by a new crystal filter which we began installing in all production units a few months ago. This amazing little gem is made exclusively for Swan by C-F Networks. The selectivity it provides for voice communication is as good or better than the selectivity provided in any other sideband equipment, regardless of price.

There are 3 important factors about a filter which determine what the overall selectivity will be. One of these is its **bandwidth** at the 6 db points, and here we have carefully selected 2.7 kc. in order to give you good channel separation, and still retain the smooth, natural audio for which Swan transceivers are so well known.

The next consideration is **shape factor**, or the ratio between bandwidths at 6 and 60 db. In this respect the Swan filter gives you a "shape factor" of 1.7 to 1. This is substantially better than the 2 to 1 ratio of the mechanical filter, or 3 to 1 of the average 9 Mc. crystal filter. Best shape factors are achieved right around 5 Mc., and this is one of the main reasons for selecting 5175 kc. for the Swan I.F. (This choice of I.F. also permits single conversion design which results in fewer images and spurious signals. The only thing better than single conversion is no conversion at all.)

The third important factor, but by no means the least, is the measure of **ultimate rejection**, or how far the skirts fall before flaring out. Take a look at the graph and you'll see that this is better than 100 db with the Swan filter! Ultimate rejection determines how well your receiver attenuates those strong adjacent channel signals,



especially the guy down the street with the big linear. In this respect, the Swan filter is superior to others being used in Amateur sideband gear.

In Swan transceivers, the filter is also used when transmitting, of course, and in this mode the shape factor determines what your unwanted sideband suppression will be. We have been advertising 40 db, but this is a conservative figure, since it is really better than 50 db. Also, we've been advertising only 400 watts PEP input to the 350, but actually the average production unit peaks over 500 watts before flat-topping, which is why the 350 gets out so well, and sounds so good. Compare these features with any other sideband transceiver, and they all sell for more money!

73, Herb Johnson, W6QKI.



AUSTRALIAN DISTRIBUTORS:

W.F.S. ELECTRONICS SUPPLY CO.

227 Victoria Road, Rydalmere, N.S.W. 638-1715

ATLANTIC RADIO

36 Oxford St., Woollahra, N.S.W. 31-7811